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* * * * * Welcome to STN International * * * * *

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	FEB 25	CA/CAPLUS - Russian Agency for Patents and Trademarks (ROSPATENT) added to list of core patent offices covered
NEWS	4	FEB 28	PATDPAFULL - New display fields provide for legal status data from INPADOC
NEWS	5	FEB 28	BABS - Current-awareness alerts (SDIs) available
NEWS	6	FEB 28	MEDLINE/LMEDLINE reloaded
NEWS	7	MAR 02	GBFULL: New full-text patent database on STN
NEWS	8	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	9	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	10	MAR 22	KOREAPAT now updated monthly; patent information enhanced
NEWS	11	MAR 22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	12	MAR 22	PATDPASPC - New patent database available
NEWS	13	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	14	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	15	APR 04	EMBASE - Database reloaded and enhanced
NEWS	16	APR 18	New CAS Information Use Policies available online
NEWS	17	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS	18	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAPLUS
NEWS EXPRESS			JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 15:24:20 ON 04 MAY 2005

=> index medicine

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS, CEN, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ESBIODBASE, IFIPAT, IMSDRUGNEWS, IMSPRODUCT, IPA, JICST-EPLUS, KOSMET, LIFESCI, MEDICONF, MEDLINE, NAPRALERT, ...' ENTERED AT 15:24:33 ON 04 MAY 2005

39 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view search error messages that display as 0* with SET DETAIL OFF.

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and rheumatoid arthritis

3 FILE BIOSIS

5 FILE CAPLUS

11 FILES SEARCHED...

3 FILE EMBASE

2 FILE ESBIODBASE

1 FILE IFIPAT

1 FILE LIFESCI

2 FILE MEDLINE

3 FILE NLDB

2 FILE PASCAL

31 FILES SEARCHED...

2 FILE SCISEARCH

28 FILE USPATFULL

11 FILES HAVE ONE OR MORE ANSWERS, 39 FILES SEARCHED IN STNINDEX

L1 QUE (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S) NICOTINIC AND RHEUMATOID ARTHRITIS

=> d rank

F1 28 USPATFULL

F2 5 CAPLUS

F3 3 BIOSIS

F4 3 EMBASE

F5 3 NLDB

F6 2 ESBIODBASE

F7 2 MEDLINE

F8 2 PASCAL

F9 2 SCISEARCH

F10 1 IFIPAT

F11 1 LIFESCI

=> index pharmacology

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

1.77

1.98

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, BABS, BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS, CBNB, CEN, CIN, CONFSCI, DDFB, DDFU, DGENE, DIOGENES, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ESBIODBASE, FEDRIP, IFIPAT, IMSDRUGNEWS, ...' ENTERED AT 15:26:32 ON 04 MAY 2005

57 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view

search error messages that display as 0* with SET DETAIL OFF.

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and rheumatoid arthritis

```
      3  FILE BIOSIS
      5  FILE CAPLUS
      1  FILE CBNB
18 FILES SEARCHED...
      3  FILE EMBASE
      2  FILE ESBIODBASE
      0* FILE FEDRIP
      1  FILE IFIPAT
      1  FILE IMSRESEARCH
     14  FILE INVESTEXT
36 FILES SEARCHED...
      1  FILE LIFESCI
      2  FILE MEDLINE
      2  FILE PASCAL
      1  FILE PHAR
      2  FILE PROMT
      2  FILE SCISEARCH
     28  FILE USPATFULL
56 FILES SEARCHED...
```

15 FILES HAVE ONE OR MORE ANSWERS, 57 FILES SEARCHED IN STNINDEX

L2 QUE (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S) NICOTINIC AND RHEUMATOID ARTHRITIS

=> d rank

F1	28	USPATFULL
F2	14	INVESTEXT
F3	5	CAPLUS
F4	3	BIOSIS
F5	3	EMBASE
F6	2	ESBIODBASE
F7	2	MEDLINE
F8	2	PASCAL
F9	2	PROMT
F10	2	SCISEARCH
F11	1	CBNB
F12	1	IFIPAT
F13	1	IMSRESEARCH
F14	1	LIFESCI
F15	1	PHAR

=> index health

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	1.18	3.16

INDEX 'ABI-INFORM, ADISCTI, ADISINSIGHT, ADISNEWS, AQUALINE, AQUASCI,
BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS,
CBNB, CEN, CHEMLIST, CIN, CONFSCI, CSNB, DISSABS, EMBAL, EMBASE, ENERGY,
ENVIROENG, ESBIODBASE, FEDRIP, FOMAD, ...' ENTERED AT 15:27:55 ON 04 MAY 2005

55 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and rheumatoid arthritis

```
      3  FILE BIOSIS
      5  FILE CAPLUS
      1  FILE CBNB
      3  FILE EMBASE
```

```

      2  FILE ESBIODBASE
25 FILES SEARCHED...
      0* FILE FEDRIP
      1  FILE IFIPAT
      1  FILE LIFESCI
      2  FILE MEDLINE
      3  FILE NLDB
      2  FILE PASCAL
47 FILES SEARCHED...
      2  FILE PROMT
      2  FILE SCISEARCH
      28 FILE USPATFULL

```

```

13 FILES HAVE ONE OR MORE ANSWERS,      55 FILES SEARCHED IN STNINDEX

```

```

L3  QUE (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S) NICOTINIC AND RHEUMATOID ARTHRITIS

```

```

=> d rank
F1      28  USPATFULL
F2      5   CAPLUS
F3      3   BIOSIS
F4      3   EMBASE
F5      3   NLDB
F6      2   ESBIODBASE
F7      2   MEDLINE
F8      2   PASCAL
F9      2   PROMT
F10     2   SCISEARCH
F11     1   CBNB
F12     1   IFIPAT
F13     1   LIFESCI

```

```

=> file medline
COST IN U.S. DOLLARS      SINCE FILE      TOTAL
                           ENTRY      SESSION
FULL ESTIMATED COST      1.18      4.34

```

```

FILE 'MEDLINE' ENTERED AT 15:29:17 ON 04 MAY 2005

```

```

FILE LAST UPDATED: 3 MAY 2005 (20050503/UP).  FILE COVERS 1950 TO DATE.

```

```

On December 19, 2004, the 2005 MeSH terms were loaded.

```

```

The MEDLINE reload for 2005 is now available.  For details enter HELP
RLOAD at an arrow prompt (=>).  See also:

```

```

      http://www.nlm.nih.gov/mesh/
      http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

```

```

OLDMEDLINE now back to 1950.

```

```

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
MeSH 2005 vocabulary.

```

```

This file contains CAS Registry Numbers for easy and accurate
substance identification.

```

```

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and (rheumatoid arthritis or RA)
      978 ALPHA7
      521802 ALPHA
      1376236 7
      1418 ALPHA-7
            (ALPHA(W)7)
      521802 ALPHA

```


1376236 7

1418 ALPHA 7

(ALPHA(W) 7)

27029 NICOTINIC

845 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC

80268 RHEUMATOID

109889 ARTHRITIS

47480 RHEUMATOID ARTHRITIS

(RHEUMATOID(W) ARTHRITIS)

435794 RA

L4 2 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1-2 all

L4 ANSWER 1 OF 2 MEDLINE on STN

AN 2005030497 MEDLINE

DN PubMed ID: 15656874

TI Autonomic neural regulation of immunity.

AU Czura C J; Tracey K J

CS North Shore-LIJ Research Institute, Center for Patient Oriented Research, Manhasset, NY, USA.. cczura@optonline.net

SO Journal of internal medicine, (2005 Feb) 257 (2) 156-66.

Journal code: 8904841. ISSN: 0954-6820.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200503

ED Entered STN: 20050120

Last Updated on STN: 20050309

Entered Medline: 20050308

AB The 'cytokine theory of disease' states that an overproduction of cytokines can cause the clinical manifestations of disease. Much effort has been expended to determine how cytokines are regulated in normal health. Transcriptional, translational and other molecular control mechanisms protect the host from excessive cytokine production. A recent discovery revealed an unexpected pathway that inhibits macrophage cytokine production. The inflammatory reflex is a physiological pathway in which the autonomic nervous system detects the presence of inflammatory stimuli and modulates cytokine production. Afferent signals to the brain are transmitted via the vagus nerve, which activates a reflex response that culminates in efferent vagus nerve signalling. Termed the 'cholinergic anti-inflammatory pathway', efferent activity in the vagus nerve releases acetylcholine (ACh) in the vicinity of macrophages within the reticuloendothelial system. ACh can interact specifically with macrophage **alpha7** subunits of **nicotinic** ACh receptors, leading to cellular deactivation and inhibition of cytokine release. This 'hard-wired' connection between the nervous and immune systems can be harnessed therapeutically in animal models of inflammatory disease, via direct electrical stimulation of the vagus nerve, or through the use of cholinergic agonists that specifically activate the macrophage **alpha7** subunit of the ACh receptor. Autonomic dysfunction has been associated with human inflammatory diseases including **rheumatoid arthritis**, diabetes and sepsis; whether this dysfunction results from the inflammatory component of these diseases, or is actually an underlying cause, is now less clear. The description of the cholinergic anti-inflammatory now brings to the fore several new therapeutic strategies for inflammatory disease, and suggests that many of these diseases may actually be diseases of autonomic dysfunction.

CT *Autonomic Nervous System: PH, physiology

*Cytokines: PH, physiology

Humans

Inflammation: PP, pathophysiology

*Models, Neurological

*Neuroimmunomodulation: PH, physiology
Reflex: PH, physiology
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.

CN 0 (Cytokines)

L4 ANSWER 2 OF 2 MEDLINE on STN

AN 2003033986 MEDLINE

DN PubMed ID: 12508119

TI **Nicotinic** acetylcholine receptor **alpha7** subunit is an essential regulator of inflammation.

CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886

Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636

AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J

CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.

SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.

Journal code: 0410462. ISSN: 0028-0836.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200303

ED Entered STN: 20030124

Last Updated on STN: 20030308

Entered Medline: 20030307

AB Excessive inflammation and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, **rheumatoid arthritis** and inflammatory bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive inflammation. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic inflammatory responses. This physiological mechanism, termed the 'cholinergic anti-inflammatory pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the **nicotinic** acetylcholine receptor **alpha7** subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in **alpha7**-deficient mice. Thus, the **nicotinic** acetylcholine receptor **alpha7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-inflammatory pathway.

CT Check Tags: Female; Male

Acetylcholine: PD, pharmacology

Aging: PH, physiology

Animals

Bungarotoxins: ME, metabolism

Cells, Cultured

Electric Stimulation

Endotoxemia: GE, genetics

Endotoxemia: ME, metabolism

Humans

Inflammation: GE, genetics

*Inflammation: ME, metabolism

Macrophages, Peritoneal: DE, drug effects

*Macrophages, Peritoneal: ME, metabolism

Mice

Mice, Inbred C57BL

Mice, Knockout

Nicotine: PD, pharmacology
Protein Subunits: GE, genetics
Protein Subunits: ME, metabolism
RNA, Messenger: GE, genetics
RNA, Messenger: ME, metabolism
Receptors, Nicotinic: GE, genetics
*Receptors, Nicotinic: ME, metabolism
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
*Tumor Necrosis Factor-alpha: ME, metabolism
Vagus Nerve: PH, physiology

RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors,
Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin
receptor)

=> s 7963254

L5 0 7963254

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and (tnf or tumor necrosis factor
UNMATCHED LEFT PARENTHESIS 'AND (TNF'

The number of right parentheses in a query must be equal to the
number of left parentheses.

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and (tnf or tumor necrosis factor)

978 ALPHA7

521802 ALPHA

1376236 7

1418 ALPHA-7

(ALPHA(W) 7)

521802 ALPHA

1376236 7

1418 ALPHA 7

(ALPHA(W) 7)

27029 NICOTINIC

845 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC

50065 TNF

594700 TUMOR

156643 NECROSIS

682620 FACTOR

65608 TUMOR NECROSIS FACTOR

(TUMOR(W) NECROSIS (W) FACTOR)

L6 7 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC AND (TNF OR TUMOR
NECROSIS FACTOR)

=> d 1-7 all

L6 ANSWER 1 OF 7 MEDLINE on STN

AN 2005176582 IN-PROCESS

DN PubMed ID: 15809354

TI Cholinergic stimulation blocks endothelial cell activation and leukocyte
recruitment during inflammation.

AU Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara;
Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz
Christine N

CS North Shore-LIJ, Manhasset, NY 11030.

SO Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.

Journal code: 2985109R. ISSN: 0022-1007.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals

ED Entered STN: 20050406

Last Updated on STN: 20050406

AB Endothelial cell activation plays a critical role in regulating leukocyte recruitment during inflammation and infection. Based on recent studies showing that acetylcholine and other cholinergic mediators suppress the production of proinflammatory cytokines via the **alpha7 nicotinic** acetylcholine receptor (**alpha7 nAChR**) expressed by macrophages and our observations that human microvascular endothelial cells express the **alpha7 nAChR**, we examined the effect of cholinergic stimulation on endothelial cell activation in vitro and in vivo. Using the Shwartzman reaction, we observed that nicotine (2 mg/kg) and the novel cholinergic agent CAP55 (12 mg/kg) inhibit endothelial cell adhesion molecule expression. Using endothelial cell cultures, we observed the direct inhibitory effects of acetylcholine and cholinergic agents on **tumor necrosis factor (TNF)**-induced endothelial cell activation. Mecamylamine, an nAChR antagonist, reversed the inhibition of endothelial cell activation by both cholinergic agonists, confirming the antiinflammatory role of the nAChR cholinergic pathway. In vitro mechanistic studies revealed that nicotine blocked **TNF**-induced nuclear factor-kappaB nuclear entry in an inhibitor kappaB (IkappaB)alpha- and IkappaBepsilon-dependent manner. Finally, with the carrageenan air pouch model, both vagus nerve stimulation and cholinergic agonists significantly blocked leukocyte migration in vivo. These findings identify the endothelium, a key regulator of leukocyte trafficking during inflammation, as a target of anti-inflammatory cholinergic mediators.

L6 ANSWER 2 OF 7 MEDLINE on STN

AN 2004545484 MEDLINE

DN PubMed ID: 15502843

TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.

CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907

AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis

CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.

SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.

Journal code: 9502015. ISSN: 1078-8956.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200502

ED Entered STN: 20041102

Last Updated on STN: 20050205

Entered Medline: 20050204

AB Physiological anti-inflammatory mechanisms can potentially be exploited for the treatment of inflammatory disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or **tumor necrosis factor-alpha (TNF-alpha)**. Nicotinic stimulation prevents activation of the NF-kappaB pathway and inhibits HMGB1 secretion through a specific 'nicotinic anti-inflammatory pathway' that requires the **alpha7 nicotinic** acetylcholine receptor (**alpha7nAChR**). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in experimental models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiological inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the **alpha7nAChR** might have therapeutic potential for the treatment of

sepsis.

CT Check Tags: Comparative Study
 Acetylcholine: AG, agonists
 *Acetylcholine: ME, metabolism
 Animals
 Cecum: IN, injuries
 Fluorescent Antibody Technique
 HMGB1 Protein: AI, antagonists & inhibitors
 HMGB1 Protein: BL, blood
 *HMGB1 Protein: ME, metabolism
 Humans
 *Inflammation: ME, metabolism
 Lipopolysaccharides
 Macrophages: ME, metabolism
 Mice
 Neuroimmunomodulation: PH, physiology
 *Nicotine: ME, metabolism
 *Nicotine: TU, therapeutic use
 Oligonucleotides
 *Receptors, Nicotinic: ME, metabolism
 Research Support, Non-U.S. Gov't
 *Sepsis: DT, drug therapy
 Sepsis: ME, metabolism
 Signal Transduction: PH, physiology

RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)

CN 0 (HMGB1 Protein); 0 (Lipopolysaccharides); 0 (Oligonucleotides); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

L6 ANSWER 3 OF 7 MEDLINE on STN

AN 2004436284 MEDLINE

DN PubMed ID: 15342104

TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.

AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F

CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.

SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
 Journal code: 7605818. ISSN: 0361-9230.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200411

ED Entered STN: 20040903
 Last Updated on STN: 20041219
 Entered Medline: 20041129

AB Chronic brain inflammation is the common final pathway in the majority of neurodegenerative diseases and central to this phenomenon is the immunological activation of brain mononuclear phagocyte cells, called microglia. This inflammatory mechanism is a central component of HIV-associated dementia (HAD). In the healthy state, there are endogenous signals from neurons and astrocytes, which limit excessive central nervous system (CNS) inflammation. However, the signals controlling this process have not been fully elucidated. Studies on the peripheral nervous system suggest that a cholinergic anti-inflammatory pathway regulates systemic inflammatory response by way of acetylcholine acting at the **alpha7 nicotinic acetylcholine receptor (alpha7nAChR)** found on blood-borne macrophages. Recent data from our laboratory indicates that cultured microglial cells also express this same receptor and that microglial anti-inflammatory properties are mediated through it and the p44/42 mitogen-activated protein kinase (MAPK) system. Here we report for the first time the creation of an in vitro model of HAD composed of cultured microglial cells synergistically activated by the addition of IFN-gamma and the HIV-1 coat glycoprotein, gp120. Furthermore, this

activation, as measured by **TNF-alpha** and nitric oxide (NO) release, is synergistically attenuated through the **alpha7 nAChR** and **p44/42 MAPK** system by pretreatment with nicotine, and the cholinesterase inhibitor, galantamine. Our findings suggest a novel therapeutic combination to treat or prevent the onset of HAD through this modulation of the microglia inflammatory mechanism.

CT Check Tags: Comparative Study

Analysis of Variance

Animals

Animals, Newborn

Blotting, Western: MT, methods

Cells, Cultured

Cerebral Cortex: CY, cytology

Cholinesterase Inhibitors: PD, pharmacology

Drug Synergism

Enzyme-Linked Immunosorbent Assay: MT, methods

*Galantamine: PD, pharmacology

*HIV Envelope Protein gp120: PD, pharmacology

Interferon Type II: ME, metabolism

Mice

*Microglia: DE, drug effects

Microglia: ME, metabolism

Mitogen-Activated Protein Kinase 1: ME, metabolism

Mitogen-Activated Protein Kinase 3: ME, metabolism

*Nicotine: PD, pharmacology

*Nicotinic Agonists: PD, pharmacology

Nitric Oxide: ME, metabolism

Research Support, Non-U.S. Gov't

Time Factors

Tumor Necrosis Factor-alpha: ME, metabolism

RN 10102-43-9 (Nitric Oxide); 357-70-0 (Galantamine); 54-11-5 (Nicotine); 82115-62-6 (Interferon Type II)

CN 0 (Cholinesterase Inhibitors); 0 (HIV Envelope Protein gp120); 0 (Nicotinic Agonists); 0 (**Tumor Necrosis Factor** -alpha); EC 2.7.1.37 (Mitogen-Activated Protein Kinase 1); EC 2.7.1.37 (Mitogen-Activated Protein Kinase 3)

L6 ANSWER 4 OF 7 MEDLINE on STN

AN 2004163757 MEDLINE

DN PubMed ID: 15056277

TI Cholinergic modulation of microglial activation by **alpha 7 nicotinic** receptors.

AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun

CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medicine, Tampa, Florida, USA.

SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.

Journal code: 2985190R. ISSN: 0022-3042.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200405

ED Entered STN: 20040402

Last Updated on STN: 20040505

Entered Medline: 20040504

AB Almost all degenerative diseases of the CNS are associated with chronic inflammation. A central step in this process is the activation of brain mononuclear phagocyte cells, called microglia. While it is recognized that healthy neurons and astrocytes regulate the magnitude of microglia-mediated innate immune responses and limit excessive CNS inflammation, the endogenous signals governing this process are not fully understood. In the peripheral nervous system, recent studies suggest that an endogenous 'cholinergic anti-inflammatory pathway' regulates systemic

inflammatory responses via **alpha 7 nicotinic** acetylcholinergic receptors (nAChR) found on blood-borne macrophages. These data led us to investigate whether a similar cholinergic pathway exists in the brain that could regulate microglial activation. Here we report for the first time that cultured microglial cells express alpha 7 nAChR subunit as determined by RT-PCR, western blot, immunofluorescent, and immunohistochemistry analyses. Acetylcholine and nicotine pre-treatment inhibit lipopolysaccharide (LPS)-induced **TNF-alpha** release in murine-derived microglial cells, an effect attenuated by **alpha 7 selective nicotinic antagonist**, alpha-bungarotoxin. Furthermore, this inhibition appears to be mediated by a reduction in phosphorylation of p44/42 and p38 mitogen-activated protein kinase (MAPK). Though preliminary, our findings suggest the existence of a brain cholinergic pathway that regulates microglial activation through **alpha 7 nicotinic** receptors. Negative regulation of microglia activation may also represent additional mechanism underlying nicotine's reported neuroprotective properties.

CT *Acetylcholine: PD, pharmacology
 Animals
 Bungarotoxins: PD, pharmacology
 Cells, Cultured
 Lipopolysaccharides: PD, pharmacology
 Mice
 Mice, Inbred C57BL
 Microglia: CY, cytology
 *Microglia: DE, drug effects
 *Microglia: ME, metabolism
 Mitogen-Activated Protein Kinases: ME, metabolism
 Nicotine: PD, pharmacology
 Nicotinic Antagonists: PD, pharmacology
 Phosphorylation: DE, drug effects
 Receptors, Nicotinic: DE, drug effects
 *Receptors, Nicotinic: ME, metabolism
 Research Support, Non-U.S. Gov't
 Signal Transduction: DE, drug effects
Tumor Necrosis Factor-alpha: ME, metabolism
 p38 Mitogen-Activated Protein Kinases
 RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
 CN 0 (Bungarotoxins); 0 (Lipopolysaccharides); 0 (Nicotinic Antagonists); 0 (Receptors, Nicotinic); 0 (**Tumor Necrosis Factor-alpha**); 0 (alpha-bungarotoxin receptor); EC 2.7.1.37 (Mitogen-Activated Protein Kinases); EC 2.7.1.37 (p38 Mitogen-Activated Protein Kinases)

L6 ANSWER 5 OF 7 MEDLINE on STN
 AN 2003509329 MEDLINE
 DN PubMed ID: 14506129
 TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.
 AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Noureddine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel
 CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.
 SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
 Journal code: 9208958. ISSN: 0964-6906.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200407
 ED Entered STN: 20031031
 Last Updated on STN: 20040709
 Entered Medline: 20040708

AB Mal de Meleda is an autosomal recessive inflammatory and keratotic palmoplantar skin disorder due to mutations in the ARS B gene, encoding for SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1). SLURP-1 belongs to the Ly-6/uPAR superfamily of receptor and secreted proteins, which participate in signal transduction, immune cell activation or cellular adhesion. The high degree of structural similarity between SLURP-1 and the three fingers motif of snake neurotoxins and Lynx1 suggests that this protein interacts with the neuronal acetylcholine receptors. We found that SLURP-1 potentiates the human **alpha 7 nicotinic** acetylcholine receptors that are present in keratinocytes. These results identify SLURP-1 as a secreted epidermal neuromodulator which is likely to be essential for both epidermal homeostasis and inhibition of **TNF-alpha** release by macrophages during wound healing. This explains both the hyperproliferative as well as the inflammatory clinical phenotype of Mal de Meleda.

CT Check Tags: Female
Acetylcholine: ME, metabolism
Amino Acid Sequence
Animals
Antigens, Ly: CH, chemistry
*Antigens, Ly: GE, genetics
Antigens, Ly: IP, isolation & purification
Antigens, Ly: PD, pharmacology
Cell Line
Cell Nucleus: ME, metabolism
Clone Cells
DNA, Complementary: AD, administration & dosage
DNA, Complementary: ME, metabolism
Dose-Response Relationship, Drug
*Epidermis: ME, metabolism
Genes, Recessive
Humans
*Keratoderma, Palmoplantar: GE, genetics
Keratoderma, Palmoplantar: ME, metabolism
Keratoderma, Palmoplantar: PA, pathology
Microinjections
Models, Molecular
Moths: CY, cytology
Mutation
*Neurotransmitters: ME, metabolism
Oocytes: ME, metabolism
Patch-Clamp Techniques
Peptides: CH, chemistry
Peptides: GE, genetics
Peptides: ME, metabolism
Phenotype
Protein Structure, Tertiary
Receptors, Cholinergic: DE, drug effects
Receptors, Cholinergic: ME, metabolism
Recombinant Proteins: IP, isolation & purification
Recombinant Proteins: ME, metabolism
Research Support, Non-U.S. Gov't
Urinary Plasminogen Activator: CH, chemistry
*Urinary Plasminogen Activator: GE, genetics
Urinary Plasminogen Activator: IP, isolation & purification
Urinary Plasminogen Activator: PD, pharmacology
Xenopus laevis: PH, physiology

RN 51-84-3 (Acetylcholine)

CN 0 (ARS protein, human); 0 (Antigens, Ly); 0 (DNA, Complementary); 0 (Neurotransmitters); 0 (Peptides); 0 (Receptors, Cholinergic); 0 (Recombinant Proteins); EC 3.4.21.73 (Urinary Plasminogen Activator)

L6 ANSWER 6 OF 7 MEDLINE on STN

AN 2003115931 MEDLINE

DN PubMed ID: 12628466

TI A beta-induced **TNF**-alpha expression and acetylcholine action in mouse glial cells.
 AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki
 CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.
 SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
 Journal code: 0375521. ISSN: 0024-3205.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200304
 ED Entered STN: 20030312
 Last Updated on STN: 20030406
 Entered Medline: 20030404
 AB The brains in patients with Alzheimer's disease show chronic inflammatory responses characterized by activated glial cells and increased expression of cytokines. It is of interest to determine whether acetylcholine (ACh) affects Abeta-induced cytokine expression in the glial cells. Since it has been shown that **alpha7** subunits of **nicotinic** ACh receptors are expressed in glial cells and that Abeta(1-42) binds to **alpha7**, we examined the effects of cholinergic agonists, carbachol, nicotine and oxotremorine-M, on Abeta-induced **TNF**-alpha expression in mouse glial cells. We did not observe any regulatory effects of ACh on Abeta-induced **TNF**-alpha transcription in the glial cells. We discuss the pathophysiological roles of ACh in glial cells in the brains of patients with Alzheimer's disease.
 Copyright 2003 Elsevier Science Inc.
 CT *Acetylcholine: PD, pharmacology
 *Amyloid beta-Protein: PD, pharmacology
 Animals
 Carbachol: PD, pharmacology
 Cells, Cultured
 Glyceraldehyde-3-Phosphate Dehydrogenases: ME, metabolism
 Inflammation: PA, pathology
 Mice
 Muscarinic Agonists: PD, pharmacology
 Neuroglia: DE, drug effects
 *Neuroglia: ME, metabolism
 Nicotine: PD, pharmacology
 Nicotinic Agonists: PD, pharmacology
 Oxotremorine: PD, pharmacology
 *Peptide Fragments: PD, pharmacology
 Reverse Transcriptase Polymerase Chain Reaction
 ***Tumor Necrosis Factor-alpha: BI, biosynthesis**
 RN 51-83-2 (Carbachol); 51-84-3 (Acetylcholine); 54-11-5 (Nicotine); 70-22-4 (Oxotremorine)
 CN 0 (Amyloid beta-Protein); 0 (Muscarinic Agonists); 0 (Nicotinic Agonists); 0 (Peptide Fragments); 0 (**Tumor Necrosis Factor-alpha**); 0 (amyloid beta-protein (1-42)); EC 1.2.1.- (Glyceraldehyde-3-Phosphate Dehydrogenases)
 L6 ANSWER 7 OF 7 MEDLINE on STN
 AN 2003033986 MEDLINE
 DN PubMed ID: 12508119
 TI **Nicotinic** acetylcholine receptor **alpha7** subunit is an essential regulator of inflammation.
 CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
 Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
 AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
 CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
 SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication:

2002-12-22.

Journal code: 0410462. ISSN: 0028-0836.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200303

ED Entered STN: 20030124

Last Updated on STN: 20030308

Entered Medline: 20030307

AB Excessive inflammation and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, rheumatoid arthritis and inflammatory bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive inflammation. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic inflammatory responses. This physiological mechanism, termed the 'cholinergic anti-inflammatory pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the nicotinic acetylcholine receptor **alpha7** subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in **alpha7**-deficient mice. Thus, the nicotinic acetylcholine receptor **alpha7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-inflammatory pathway.

CT Check Tags: Female; Male

Acetylcholine: PD, pharmacology

Aging: PH, physiology

Animals

Bungarotoxins: ME, metabolism

Cells, Cultured

Electric Stimulation

Endotoxemia: GE, genetics

Endotoxemia: ME, metabolism

Humans

Inflammation: GE, genetics

*Inflammation: ME, metabolism

Macrophages, Peritoneal: DE, drug effects

*Macrophages, Peritoneal: ME, metabolism

Mice

Mice, Inbred C57BL

Mice, Knockout

Nicotine: PD, pharmacology

Protein Subunits: GE, genetics

Protein Subunits: ME, metabolism

RNA, Messenger: GE, genetics

RNA, Messenger: ME, metabolism

Receptors, Nicotinic: GE, genetics

*Receptors, Nicotinic: ME, metabolism

Research Support, U.S. Gov't, Non-P.H.S.

Research Support, U.S. Gov't, P.H.S.

*Tumor Necrosis Factor-alpha: ME, metabolism

Vagus Nerve: PH, physiology

RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)

CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors,

Nicotinic); 0 (Tumor Necrosis Factor-alpha);

0 (alpha-bungarotoxin receptor)

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and inflamm?

978 ALPHA7

521802 ALPHA
 1376236 7
 1418 ALPHA-7
 (ALPHA(W) 7)
 521802 ALPHA
 1376236 7
 1418 ALPHA 7
 (ALPHA(W) 7)
 27029 NICOTINIC
 845 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC
 302840 INFLAMM?
 L7 13 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC AND INFLAMM?

=> d 1-13 all

L7 ANSWER 1 OF 13 MEDLINE on STN
 AN 2005176582 IN-PROCESS
 DN PubMed ID: 15809354
 TI Cholinergic stimulation blocks endothelial cell activation and leukocyte recruitment during **inflammation**.
 AU Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara; Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz Christine N
 CS North Shore-LIJ, Manhasset, NY 11030.
 SO Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.
 Journal code: 2985109R. ISSN: 0022-1007.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
 ED Entered STN: 20050406
 Last Updated on STN: 20050406
 AB Endothelial cell activation plays a critical role in regulating leukocyte recruitment during **inflammation** and infection. Based on recent studies showing that acetylcholine and other cholinergic mediators suppress the production of proinflammatory cytokines via the **alpha7 nicotinic** acetylcholine receptor (**alpha7 nAChR**) expressed by macrophages and our observations that human microvascular endothelial cells express the **alpha7 nAChR**, we examined the effect of cholinergic stimulation on endothelial cell activation in vitro and in vivo. Using the Shwartzman reaction, we observed that nicotine (2 mg/kg) and the novel cholinergic agent CAP55 (12 mg/kg) inhibit endothelial cell adhesion molecule expression. Using endothelial cell cultures, we observed the direct inhibitory effects of acetylcholine and cholinergic agents on tumor necrosis factor (TNF)-induced endothelial cell activation. Mecamylamine, an nAChR antagonist, reversed the inhibition of endothelial cell activation by both cholinergic agonists, confirming the antiinflammatory role of the nAChR cholinergic pathway. In vitro mechanistic studies revealed that nicotine blocked TNF-induced nuclear factor-kappaB nuclear entry in an inhibitor kappaB (IkappaB)alpha- and IkappaBepsilon-dependent manner. Finally, with the carrageenan air pouch model, both vagus nerve stimulation and cholinergic agonists significantly blocked leukocyte migration in vivo. These findings identify the endothelium, a key regulator of leukocyte trafficking during **inflammation**, as a target of anti-**inflammatory** cholinergic mediators.

L7 ANSWER 2 OF 13 MEDLINE on STN
 AN 2005149848 IN-PROCESS
 DN PubMed ID: 15780465
 TI Antinociceptive effects of choline against acute and **inflammatory** pain.
 AU Wang Y; Su D-M; Wang R-H; Liu Y; Wang H
 CS Thadweik Academy of Medicine, Beijing 100850, PR China; Beijing Institute of Pharmacology and Toxicology, 27 Taiping Road, Beijing 100850, PR China.

SO Neuroscience, (2005) 132 (1) 49-56.
 Journal code: 7605074. ISSN: 0306-4522.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
 ED Entered STN: 20050323
 Last Updated on STN: 20050323
 AB We used the hot plate test and the formalin test to evaluate the antinociception of choline after i.c.v. or i.v. administration. The analgesic mechanism of choline was also studied. The response latency of mice was significantly prolonged in the hot plate test after choline (90-120 mug/animals) i.c.v. administration in a dose-dependent manner. Pretreatment with methyllycaconitine citrate (MLA), alpha-bungarotoxin, or atropine blocked the antinociception of choline in the hot plate test. In contrast, mecamlamine and naloxone had no effect. No antinociceptive action of choline was found in the hot plate test, but it did have an effect in the late phase of the formalin test after i.v. administration. The effect of choline on anti-inflammatory pain was blocked by MLA, but not by mecamlamine, naloxone and atropine, which is indicative of the involvement of alpha7 receptors in peripheral sites. When choline (2 mg/kg) was coadministered with aspirin (9.4 mg/kg), the licking/biting times in the late phase significantly decreased, although no effects were shown when these doses of drugs were used alone. Similarly, coadministration of choline (2 mg/kg) with morphine (0.165 mg/kg) significantly increased the antinociception of morphine in the late phase, but had no effect in the early phase. These results demonstrate that activation of alpha7 nicotinic receptors by choline elicits antinociceptive effects both in an acute thermal pain model and in an inflammatory pain model. Choline holds promise for development as a non-addictive analgesic drug and in reducing the regular dose of aspirin or morphine in inflammatory pain.

L7. ANSWER 3 OF 13 MEDLINE on STN
 AN 2005030497 MEDLINE
 DN PubMed ID: 15656874
 TI Autonomic neural regulation of immunity.
 AU Czura C J; Tracey K J
 CS North Shore-LIJ Research Institute, Center for Patient Oriented Research, Manhasset, NY, USA.. cczura@optonline.net
 SO Journal of internal medicine, (2005 Feb) 257 (2) 156-66.
 Journal code: 8904841. ISSN: 0954-6820.
 CY England; United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200503
 ED Entered STN: 20050120
 Last Updated on STN: 20050309
 Entered Medline: 20050308
 AB The 'cytokine theory of disease' states that an overproduction of cytokines can cause the clinical manifestations of disease. Much effort has been expended to determine how cytokines are regulated in normal health. Transcriptional, translational and other molecular control mechanisms protect the host from excessive cytokine production. A recent discovery revealed an unexpected pathway that inhibits macrophage cytokine production. The inflammatory reflex is a physiological pathway in which the autonomic nervous system detects the presence of inflammatory stimuli and modulates cytokine production. Afferent signals to the brain are transmitted via the vagus nerve, which activates a reflex response that culminates in efferent vagus nerve signalling. Termed the 'cholinergic anti-inflammatory pathway', efferent activity in the vagus nerve releases acetylcholine (ACh) in the vicinity of macrophages within the reticuloendothelial system. ACh can interact specifically with macrophage alpha7 subunits of

nicotinic ACh receptors, leading to cellular deactivation and inhibition of cytokine release. This 'hard-wired' connection between the nervous and immune systems can be harnessed therapeutically in animal models of **inflammatory** disease, via direct electrical stimulation of the vagus nerve, or through the use of cholinergic agonists that specifically activate the macrophage alpha7 subunit of the ACh receptor. Autonomic dysfunction has been associated with human **inflammatory** diseases including rheumatoid arthritis, diabetes and sepsis; whether this dysfunction results from the **inflammatory** component of these diseases, or is actually an underlying cause, is now less clear. The description of the cholinergic anti-**inflammatory** now brings to the fore several new therapeutic strategies for **inflammatory** disease, and suggests that many of these diseases may actually be diseases of autonomic dysfunction.

CT *Autonomic Nervous System: PH, physiology
 *Cytokines: PH, physiology
 Humans
 Inflammation: PP, physiopathology
 *Models, Neurological
 *Neuroimmunomodulation: PH, physiology
 Reflex: PH, physiology
 Research Support, U.S. Gov't, Non-P.H.S.
 Research Support, U.S. Gov't, P.H.S.

CN 0 (Cytokines)

L7 ANSWER 4 OF 13 MEDLINE on STN

AN 2004545484 MEDLINE

DN PubMed ID: 15502843

TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.

CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907

AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis

CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.

SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.

Journal code: 9502015. ISSN: 1078-8956.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200502

ED Entered STN: 20041102

Last Updated on STN: 20050205

Entered Medline: 20050204

AP Physiological anti-**inflammatory** mechanisms can potentially be exploited for the treatment of **inflammatory** disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or tumor necrosis factor-alpha (TNF-alpha). Nicotinic stimulation prevents activation of the NF-kappaB pathway and inhibits HMGB1 secretion through a specific '**nicotinic anti-inflammatory** pathway' that requires the **alpha7 nicotinic** acetylcholine receptor (alpha7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in experimental models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiological inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the alpha7nAChR might have therapeutic potential for the treatment of sepsis.

CT Check Tags: Comparative Study
 Acetylcholine: AG, agonists
 *Acetylcholine: ME, metabolism
 Animals
 Cecum: IN, injuries
 Fluorescent Antibody Technique
 HMGB1 Protein: AI, antagonists & inhibitors
 HMGB1 Protein: BL, blood
 *HMGB1 Protein: ME, metabolism
 Humans
 *Inflammation: ME, metabolism
 Lipopolysaccharides
 Macrophages: ME, metabolism
 Mice
 Neuroimmunomodulation: PH, physiology
 *Nicotine: ME, metabolism
 *Nicotine: TU, therapeutic use
 Oligonucleotides
 *Receptors, Nicotinic: ME, metabolism
 Research Support, Non-U.S. Gov't
 *Sepsis: DT, drug therapy
 Sepsis: ME, metabolism
 Signal Transduction: PH, physiology

RN 51-34-3 (Acetylcholine); 54-11-5 (Nicotine)
 CN 0 (HMGB1 Protein); 0 (Lipopolysaccharides); 0 (Oligonucleotides); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

L7 ANSWER 5 OF 13 MEDLINE on STN
 AN 2004497226 MEDLINE
 DN PubMed ID: 15465084
 TI Nicotinic acetylcholine receptor immunohistochemistry in Alzheimer's disease and dementia with Lewy bodies: differential neuronal and astroglial pathology.
 AU Teaktong Thanasak; Graham Alison J; Court Jennifer A; Perry Robert H; Jaros Evelyn; Johnson Mary; Hall Ros; Perry Elaine K
 CS Centre Development in Clinical Brain Aging, MRC Building, Newcastle General Hospital, Westgate Road, Newcastle upon Tyne, NE4 6BE, UK.
 SO Journal of the neurological sciences, (2004 Oct 15) 225 (1-2) 39-49. Journal code: 0375403. ISSN: 0022-510X.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200501
 ED Entered STN: 20041007
 Last Updated on STN: 20050111
 Entered Medline: 20050110

AB Alzheimer's disease (AD) and dementia with Lewy bodies (DLB) are common forms of dementia in the elderly. The neuropathology of AD and DLB is related to cholinergic dysfunctions, and both alpha4 and **alpha7 nicotinic** acetylcholine receptor (nAChR) subunits are decreased in several brain areas in both diseases. In this immunohistochemical study, we compared neuronal and astroglial alpha4 and alpha7 subunits in AD, DLB and age-matched controls in the hippocampal formation. The numbers of alpha4 reactive neurons were decreased in layer 3 of the entorhinal cortex of AD and DLB, whereas those of alpha7 reactive neurons were decreased in layer 2 of the subiculum of AD and DLB and in layer 3 of the entorhinal cortex of DLB. In contrast, the intensity of alpha7 reactive neuropil was significantly higher in AD than in controls or DLB in a number of areas of the hippocampus (CA3/4 and stratum granulosum), subiculum and entorhinal cortex. An increase in alpha7 immunoreactivity in AD was also associated with astrocytes. The number of astrocytes double-labelled with alpha7 and glial fibrillary acidic protein (GFAP) antibodies was increased in most areas of the hippocampus and entorhinal cortex in AD compared with controls and DLB. Increased astrocyte alpha7 nAChRs in AD may be

associated with **inflammatory** mechanisms related to degenerative processes specific to this disease.

CT Check Tags: Comparative Study; Female; Male

Aged

Aged, 80 and over

*Alzheimer Disease: ME, metabolism

Alzheimer Disease: PA, pathology

*Astrocytes: ME, metabolism

Brain: CY, cytology

Brain: ME, metabolism

Case-Control Studies

Cell Count: MT, methods

Glial Fibrillary Acidic Protein: ME, metabolism

Humans

Immunohistochemistry: MT, methods

*Lewy Body Disease: ME, metabolism

Lewy Body Disease: PA, pathology

*Neurons: ME, metabolism

*Receptors, Nicotinic: ME, metabolism

Research Support, Non-U.S. Gov't

CN 0 (Glial Fibrillary Acidic Protein); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

L7 ANSWER 6 OF 13 MEDLINE on STN

AN 2004436284 MEDLINE

DN PubMed ID: 15342104

TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.

AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F

CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.

SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.

Journal code: 7605818. ISSN: 0361-9230.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200411

ED Entered STN: 20040903

Last Updated on STN: 20041219

Entered Medline: 20041129

AB Chronic brain **inflammation** is the common final pathway in the majority of neurodegenerative diseases and central to this phenomenon is the immunological activation of brain mononuclear phagocyte cells, called microglia. This **inflammatory** mechanism is a central component of HIV-associated dementia (HAD). In the healthy state, there are endogenous signals from neurons and astrocytes, which limit excessive central nervous system (CNS) **inflammation**. However, the signals controlling this process have not been fully elucidated. Studies on the peripheral nervous system suggest that a cholinergic anti-**inflammatory** pathway regulates systemic **inflammatory** response by way of acetylcholine acting at the **alpha7 nicotinic** acetylcholine receptor (alpha7nAChR) found on blood-borne macrophages. Recent data from our laboratory indicates that cultured microglial cells also express this same receptor and that microglial anti-**inflammatory** properties are mediated through it and the p44/42 mitogen-activated protein kinase (MAPK) system. Here we report for the first time the creation of an in vitro model of HAD composed of cultured microglial cells synergistically activated by the addition of IFN-gamma and the HIV-1 coat glycoprotein, gp120. Furthermore, this activation, as measured by TNF-alpha and nitric oxide (NO) release, is synergistically attenuated through the alpha7 nAChR and p44/42 MAPK system by pretreatment with nicotine, and the cholinesterase inhibitor, galantamine. Our findings suggest a novel therapeutic

combination to treat or prevent the onset of HAD through this modulation of the microglia **inflammatory** mechanism.

CT Check Tags: Comparative Study

Analysis of Variance

Animals

Animals, Newborn

Blotting, Western: MT, methods

Cells, Cultured

Cerebral Cortex: CY, cytology

Cholinesterase Inhibitors: PD, pharmacology

Drug Synergism

Enzyme-Linked Immunosorbent Assay: MT, methods

*Galantamine: PD, pharmacology

*HIV Envelope Protein gp120: PD, pharmacology

Interferon Type II: ME, metabolism

Mice

*Microglia: DE, drug effects

Microglia: ME, metabolism

Mitogen-Activated Protein Kinase 1: ME, metabolism

Mitogen-Activated Protein Kinase 3: ME, metabolism

*Nicotine: PD, pharmacology

*Nicotinic Agonists: PD, pharmacology

Nitric Oxide: ME, metabolism

Research Support, Non-U.S. Gov't

Time Factors

Tumor Necrosis Factor-alpha: ME, metabolism

RN 10102-43-9 (Nitric Oxide); 357-70-0 (Galantamine); 54-11-5 (Nicotine);

82115-62-6 (Interferon Type II)

CN 0 (Cholinesterase Inhibitors); 0 (HIV Envelope Protein gp120); 0

(Nicotinic Agonists); 0 (Tumor Necrosis Factor-alpha); EC 2.7.1.37

(Mitogen-Activated Protein Kinase 1); EC 2.7.1.37 (Mitogen-Activated

Protein Kinase 3)

L7 ANSWER 7 OF 13 MEDLINE on STN

AN 2004163757 MEDLINE

DN PubMed ID: 15056277

TI Cholinergic modulation of microglial activation by **alpha**
7 **nicotinic** receptors.

AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan;

Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun

CS Child Development Center, Neuroimmunology Laboratory, Department of
Psychiatry and Behavioral Medicine, University of South Florida College of
Medicine, Tampa, Florida, USA.

SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.

Journal code: 2985190R. ISSN: 0022-3042.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200405

ED Entered STN: 20040402

Last Updated on STN: 20040505

Entered Medline: 20040504

AB Almost all degenerative diseases of the CNS are associated with chronic

inflammation. A central step in this process is the activation of

brain mononuclear phagocyte cells, called microglia. While it is

recognized that healthy neurons and astrocytes regulate the magnitude of

microglia-mediated innate immune responses and limit excessive CNS

inflammation, the endogenous signals governing this process are

not fully understood. In the peripheral nervous system, recent studies

suggest that an endogenous 'cholinergic anti-**inflammatory**

pathway' regulates systemic **inflammatory** responses via

alpha 7 nicotinic acetylcholinergic receptors

(nAChR) found on blood-borne macrophages. These data led us to

investigate whether a similar cholinergic pathway exists in the brain that

could regulate microglial activation. Here we report for the first time that cultured microglial cells express alpha 7 nAChR subunit as determined by RT-PCR, western blot, immunofluorescent, and immunohistochemistry analyses. Acetylcholine and nicotine pre-treatment inhibit lipopolysaccharide (LPS)-induced TNF-alpha release in murine-derived microglial cells, an effect attenuated by alpha 7 selective nicotinic antagonist, alpha-bungarotoxin. Furthermore, this inhibition appears to be mediated by a reduction in phosphorylation of p44/42 and p38 mitogen-activated protein kinase (MAPK). Though preliminary, our findings suggest the existence of a brain cholinergic pathway that regulates microglial activation through alpha 7 nicotinic receptors. Negative regulation of microglia activation may also represent additional mechanism underlying nicotine's reported neuroprotective properties.

CT *Acetylcholine: PD, pharmacology
 Animals
 Bungarotoxins: PD, pharmacology
 Cells, Cultured
 Lipopolysaccharides: PD, pharmacology
 Mice
 Mice, Inbred C57BL
 Microglia: CY, cytology
 *Microglia: DE, drug effects
 *Microglia: ME, metabolism
 Mitogen-Activated Protein Kinases: ME, metabolism
 Nicotine: PD, pharmacology
 Nicotinic Antagonists: PD, pharmacology
 Phosphorylation: DE, drug effects
 Receptors, Nicotinic: DE, drug effects
 *Receptors, Nicotinic: ME, metabolism
 Research Support, Non-U.S. Gov't
 Signal Transduction: DE, drug effects
 Tumor Necrosis Factor-alpha: ME, metabolism
 p38 Mitogen-Activated Protein Kinases
 RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
 CN 0 (Bungarotoxins); 0 (Lipopolysaccharides); 0 (Nicotinic Antagonists); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin receptor); EC 2.7.1.37 (Mitogen-Activated Protein Kinases); EC 2.7.1.37 (p38 Mitogen-Activated Protein Kinases)

L7 ANSWER 8 OF 13 MEDLINE on STN
 AN 2003509329 MEDLINE
 DN PubMed ID: 14506129
 TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.
 AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Noureddine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel
 CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.
 SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
 Journal code: 9208958. ISSN: 0964-6906.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200407
 ED Entered STN: 20031031
 Last Updated on STN: 20040709
 Entered Medline: 20040708
 AB Mal de Meleda is an autosomal recessive inflammatory and keratotic palmoplantar skin disorder due to mutations in the ARS B gene, encoding for SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1). SLURP-1 belongs to the Ly-6/uPAR superfamily of receptor and secreted proteins, which participate in signal transduction, immune cell activation

or cellular adhesion. The high degree of structural similarity between SLURP-1 and the three fingers motif of snake neurotoxins and Lynx1 suggests that this protein interacts with the neuronal acetylcholine receptors. We found that SLURP-1 potentiates the human **alpha 7 nicotinic** acetylcholine receptors that are present in keratinocytes. These results identify SLURP-1 as a secreted epidermal neuromodulator which is likely to be essential for both epidermal homeostasis and inhibition of TNF-alpha release by macrophages during wound healing. This explains both the hyperproliferative as well as the **inflammatory** clinical phenotype of Mal de Meleda.

CT Check Tags: Female
 Acetylcholine: ME, metabolism
 Amino Acid Sequence
 Animals
 Antigens, Ly: CH, chemistry
 *Antigens, Ly: GE, genetics
 Antigens, Ly: IP, isolation & purification
 Antigens, Ly: PD, pharmacology
 Cell Line
 Cell Nucleus: ME, metabolism
 Clone Cells
 DNA, Complementary: AD, administration & dosage
 DNA, Complementary: ME, metabolism
 Dose-Response Relationship, Drug
 *Epidermis: ME, metabolism
 Genes, Recessive
 Humans
 *Keratoderma, Palmoplantar: GE, genetics
 Keratoderma, Palmoplantar: ME, metabolism
 Keratoderma, Palmoplantar: PA, pathology
 Microinjections
 Models, Molecular
 Moths: CY, cytology
 Mutation
 *Neurotransmitters: ME, metabolism
 Oocytes: ME, metabolism
 Patch-Clamp Techniques
 Peptides: CH, chemistry
 Peptides: GE, genetics
 Peptides: ME, metabolism
 Phenotype
 Protein Structure, Tertiary
 Receptors, Cholinergic: DE, drug effects
 Receptors, Cholinergic: ME, metabolism
 Recombinant Proteins: IP, isolation & purification
 Recombinant Proteins: ME, metabolism
 Research Support, Non-U.S. Gov't
 Urinary Plasminogen Activator: CH, chemistry
 *Urinary Plasminogen Activator: GE, genetics
 Urinary Plasminogen Activator: IP, isolation & purification
 Urinary Plasminogen Activator: PD, pharmacology
 Xenopus laevis: PH, physiology

RN 51-84-3 (Acetylcholine)

CN 0 (ARS protein, human); 0 (Antigens, Ly); 0 (DNA, Complementary); 0 (Neurotransmitters); 0 (Peptides); 0 (Receptors, Cholinergic); 0 (Recombinant Proteins); EC 3.4.21.73 (Urinary Plasminogen Activator)

L7 ANSWER 9 OF 13 MEDLINE on STN

AN 2003115931 MEDLINE

DN PubMed ID: 12628466

TI A beta-induced TNF-alpha expression and acetylcholine action in mouse glial cells.

AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki

CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.

SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
Journal code: 0375521. ISSN: 0024-3205.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200304

ED Entered STN: 20030312
Last Updated on STN: 20030406
Entered Medline: 20030404

AB The brains in patients with Alzheimer's disease show chronic **inflammatory** responses characterized by activated glial cells and increased expression of cytokines. It is of interest to determine whether acetylcholine (ACh) affects Abeta-induced cytokine expression in the glial cells. Since it has been shown that **alpha7** subunits of **nicotinic** ACh receptors are expressed in glial cells and that Abeta(1-42) binds to **alpha7**, we examined the effects of cholinergic agonists, carbachol, nicotine and oxotremorine-M, on Abeta-induced TNF-alpha expression in mouse glial cells. We did not observe any regulatory effects of ACh on Abeta-induced TNF-alpha transcription in the glial cells. We discuss the pathophysiological roles of ACh in glial cells in the brains of patients with Alzheimer's disease. Copyright 2003 Elsevier Science Inc.

CT *Acetylcholine: PD, pharmacology
*Amyloid beta-Protein: PD, pharmacology
Animals
Carbachol: PD, pharmacology
Cells, Cultured
Glyceraldehyde-3-Phosphate Dehydrogenases: ME, metabolism
Inflammation: PA, pathology
Mice
Muscarinic Agonists: PD, pharmacology
Neuroglia: DE, drug effects
*Neuroglia: ME, metabolism
Nicotine: PD, pharmacology
Nicotinic Agonists: PD, pharmacology
Oxotremorine: PD, pharmacology
*Peptide Fragments: PD, pharmacology
Reverse Transcriptase Polymerase Chain Reaction
*Tumor Necrosis Factor-alpha: BI, biosynthesis

RN 51-83-2 (Carbachol); 51-84-3 (Acetylcholine); 54-11-5 (Nicotine); 70-22-4 (Oxotremorine)

CN 0 (Amyloid beta-Protein); 0 (Muscarinic Agonists); 0 (Nicotinic Agonists); 0 (Peptide Fragments); 0 (Tumor Necrosis Factor-alpha); 0 (amyloid beta-protein (1-42)); EC 1.2.1.- (Glyceraldehyde-3-Phosphate Dehydrogenases)

L7 ANSWER 10 OF 13 MEDLINE on STN

AN 2003033986 MEDLINE

DN PubMed ID: 12508119

TI **Nicotinic** acetylcholine receptor **alpha7** subunit is an essential regulator of **inflammation**.

CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636

AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J

CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.

SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals
 EM 200303
 ED Entered STN: 20030124
 Last Updated on STN: 20030308
 Entered Medline: 20030307

AB Excessive **inflammation** and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, rheumatoid arthritis and **inflammatory** bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive **inflammation**. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic **inflammatory** responses. This physiological mechanism, termed the 'cholinergic anti-**inflammatory** pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the **nicotinic** acetylcholine receptor **alpha7** subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in alpha7-deficient mice. Thus, the **nicotinic** acetylcholine receptor **alpha7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-**inflammatory** pathway.

CT Check Tags: Female; Male
 Acetylcholine: PD, pharmacology
 Aging: PH, physiology
 Animals
 Bungarotoxins: ME, metabolism
 Cells, Cultured
 Electric Stimulation
 Endotoxemia: GE, genetics
 Endotoxemia: ME, metabolism
 Humans
 Inflammation: GE, genetics
 ***Inflammation: ME, metabolism**
 Macrophages, Peritoneal: DE, drug effects
 *Macrophages, Peritoneal: ME, metabolism
 Mice
 Mice, Inbred C57BL
 Mice, Knockout
 Nicotine: PD, pharmacology
 Protein Subunits: GE, genetics
 Protein Subunits: ME, metabolism
 RNA, Messenger: GE, genetics
 RNA, Messenger: ME, metabolism
 Receptors, Nicotinic: GE, genetics
 *Receptors, Nicotinic: ME, metabolism
 Research Support, U.S. Gov't, Non-P.H.S.
 Research Support, U.S. Gov't, P.H.S.
 *Tumor Necrosis Factor-alpha: ME, metabolism
 Vagus Nerve: PH, physiology

RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
 CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin receptor)

L7 ANSWER 11 OF 13 MEDLINE on STN
 AN 2003003464 MEDLINE
 DN PubMed ID: 12509811
 TI Alzheimer's disease is associated with a selective increase in **alpha7 nicotinic** acetylcholine receptor immunoreactivity in astrocytes.
 AU Teaktong Thanasak; Graham Alison; Court Jennifer; Perry Robert; Jaros

Evelyn; Johnson Mary; Hall Ros; Perry Elaine
 CS MRC Building, Centre Development in Clinical Brain Aging, Newcastle
 General Hospital, Newcastle Upon Tyne, UK.
 SO Glia, (2003 Jan 15) 41 (2) 207-11.
 Journal code: 8806785. ISSN: 0894-1491.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200304
 ED Entered STN: 20030103
 Last Updated on STN: 20030403
 Entered Medline: 20030402
 AB Alzheimer's disease (AD) and dementia with Lewy bodies (DLB) are common
 forms of dementia in the elderly associated with cholinergic dysfunction,
 including reductions in nicotinic acetylcholine receptors (nAChRs). In
 AD, astrocytes are implicated in the formation of senile plaques, one of
 the core pathological features. Using immunohistochemistry, we have
 investigated astrocytic expression of the two major **nicotinic**
 receptor alpha subunits in the human hippocampus and entorhinal cortex.
alpha7, but not alpha4, subunit immunoreactivity was associated
 with astrocytes. An increase in the proportion of astrocytes expressing
 alpha7 immunoreactivity was observed in AD compared with age-matched
 controls. A similar increase was not evident in DLB. Elevated alpha7
 nAChRs on astrocytes in AD may contribute to alterations in calcium
 homeostasis and nitric oxide production, which in turn could affect
 beta-amyloid-mediated **inflammatory** processes in AD.
 Copyright 2002 Wiley-Liss, Inc.
 CT Aged
 Aged, 80 and over
 *Alzheimer Disease: ME, metabolism
 Alzheimer Disease: PA, pathology
 Alzheimer Disease: PP, physiopathology
 Astrocytes: CY, cytology
 *Astrocytes: ME, metabolism
 Calcium: ME, metabolism
 *Entorhinal Cortex: ME, metabolism
 Entorhinal Cortex: PA, pathology
 Entorhinal Cortex: PP, physiopathology
 *Hippocampus: ME, metabolism
 Hippocampus: PA, pathology
 Hippocampus: PP, physiopathology
 Homeostasis: PH, physiology
 Humans
 Immunohistochemistry
 Lewy Body Disease: ME, metabolism
 Lewy Body Disease: PA, pathology
 Lewy Body Disease: PP, physiopathology
 Nitric Oxide: ME, metabolism
 *Receptors, Nicotinic: ME, metabolism
 Research Support, Non-U.S. Gov't
 Senile Plaques: ME, metabolism
 *Up-Regulation: PH, physiology
 RN 10102-43-9 (Nitric Oxide); 7440-70-2 (Calcium)
 CN 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor); 0 (nicotinic
 acetylcholine receptor alpha4 subunit)
 L7 ANSWER 12 OF 13 MEDLINE on STN
 AN 2002144978 MEDLINE
 DN PubMed ID: 11790724
 TI Selective activation of central subtypes of the nicotinic acetylcholine
 receptor has opposite effects on neonatal excitotoxic brain injuries.
 AU Laudenbach Vincent; Medja Fadia; Zoli Michele; Rossi Francesco M; Evrard
 Philippe; Changeux Jean-Pierre; Gressens Pierre
 CS Laboratoire de Neurologie du Developpement, INSERM E9935, Hopital Robert

Debre, Paris, France.. vlaudenb@infobiogen.fr
 SO FASEB journal : official publication of the Federation of American
 Societies for Experimental Biology, (2002 Mar) 16 (3) 423-5. Electronic
 Publication: 2002-01-14.
 Journal code: 8804484. ISSN: 1530-6860.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200203
 ED Entered STN: 20020307
 Last Updated on STN: 20030105
 Entered Medline: 20020319
 AB The incidence of neurological disabilities ascribable to perinatal injury
 is rising in Western countries, raising ethical and financial problems..
 No curative treatments are available. The pathophysiology of brain
 lesions of hypoxic-ischemic or **inflammatory** origin involves
 various neurotransmitters or neuromodulators. Among these, glutamate
 plays a key role. By overactivating N-methyl-D-aspartate receptors, it
 triggers the excitotoxic cascade. Although addictive, nicotine prevents
 excitotoxic neuronal death in adult animals. Its potential
 neuroprotective effects have not been evaluated in neonates. We found
 that nicotine is neuroprotective in vivo, in a murine model of neonatal
 excitotoxic brain injury, and in vitro, in primary cultures of cortical
 neurons. We investigated the respective roles in nicotine-related
 neuroprotection of the two dominant **nicotinic** acetylcholine
 receptor (nAChR) isoforms, namely, alpha4beta2 (heteropentameric) and
alpha7 (homopentameric). Inhibition of alpha4beta2, either
 pharmacological (i.e., an alpha4beta2 nAChR antagonist) or molecular
 (beta2-/- knockout mice), abolished the protective effect of nicotine in
 vivo and in vitro, suggesting the involvement of alpha4beta2 nAChR in
 neonatal nicotine-related neuroprotection. In contrast, activation of
 alpha7 nAChR, which is protective in adult animals, was deleterious in our
 neonatal model, whereas its blockade, either pharmacological or molecular
 (alpha7-/- knockout mice) provided neuroprotection. Neuroprotective
 strategies must consider these opposite properties of distinct nAChR
 isoforms in neonates.
 CT Animals
 Animals, Newborn
 Autoradiography
 Brain Diseases: CI, chemically induced
 Brain Diseases: ME, metabolism
 *Brain Diseases: PA, pathology
 Cell Death: DE, drug effects
 Cells, Cultured
 Cerebral Cortex: DE, drug effects
 Cerebral Cortex: GD, growth & development
 Cerebral Cortex: PA, pathology
 Excitatory Amino Acid Agonists: AD, administration & dosage
 Excitatory Amino Acid Agonists: PD, pharmacology
 Ibotenic Acid: AD, administration & dosage
 Ibotenic Acid: AI, antagonists & inhibitors
 Injections
 Mice
 Mice, Inbred C57BL
 Mice, Knockout
 Models, Neurological
 N-Methylaspartate: ME, metabolism
 Neurons: DE, drug effects
 Neurons: PA, pathology
 Neuroprotective Agents: PD, pharmacology
 Nicotine: PD, pharmacology
 Nicotinic Antagonists: PD, pharmacology
 Receptors, Nicotinic: GE, genetics
 *Receptors, Nicotinic: ME, metabolism

*Receptors, Nicotinic: PH, physiology
 RN 2552-55-8 (Ibotenic Acid); 54-11-5 (Nicotine); 6384-92-5
 (N-Methylaspartate)
 CN 0 (Excitatory Amino Acid Agonists); 0 (Neuroprotective Agents); 0
 (Nicotinic Antagonists); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin
 receptor); 0 (nicotinic receptor alpha4beta2)

L7 ANSWER 13 OF 13 MEDLINE on STN
 AN 2001464060 MEDLINE
 DN PubMed ID: 11509192
 TI Chronic corticosterone treatment alters sensory gating in C3H mice.
 AU Stevens K E; Bullock A E; Collins A C
 CS Department of Psychiatry, C268-71, University of Colorado Health Sciences
 Center, 4200 East 9th Avenue, Denver, CO 80262, USA.. stevensk@den-res.org
 NC DA00197 (NIDA)
 DA03194 (NIDA)
 MH51931 (NIMH)
 SO Pharmacology, biochemistry, and behavior, (2001 Jul-Aug) 69 (3-4) 359-66.
 Journal code: 0367050. ISSN: 0091-3057.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200112
 ED Entered STN: 20010820
 Last Updated on STN: 20020122
 Entered Medline: 20011204

AB Two methods of evaluating inhibitory sensory processing are prepulse
 inhibition of acoustic startle (PPI) and gating of auditory evoked
 potentials. Studies using both methods suggest **nicotinic**
 acetylcholinergic receptor modulation of gating, specifically the
 alpha-bungarotoxin (alpha-BTX) binding site (**alpha7** receptor
 subtype). However, recent assessment of alpha7 null mutant mice failed to
 demonstrate any effect of the loss of this receptor in either gating
 paradigm. An alternate approach to assessing the effects of the alpha7
 receptor is to reduce its numbers in mature inbred mice, thus, avoiding
 the twin problems of background and developmental compensation inherent in
 null mutant mouse studies. Numerous studies have shown that chronic
 corticosterone (CCS) treatment selectively reduces alpha-BTX binding
 sites. C3H mice were adrenalectomized and implanted with corticosterone
 or cholesterol (control) pellets. After 8 days, they were tested in one
 of the gating paradigms. PPI and auditory gating were significantly
 diminished in corticosterone-treated mice concomitant with a reduction in
 alpha-BTX binding in several brain regions. Cholesterol-treated mice had
 no change in either paradigm. Nicotine treatment (1 mg/kg) produced
 significant improvement in both paradigms in corticosterone-treated mice.
 These data agree with previous pharmacological studies suggesting
 modulation of gating occurs through a nicotinic receptor.

CT Check Tags: Male
 Acoustic Stimulation: MT, methods
 Animals
 *Anti-Inflammatory Agents: PD, pharmacology
 Brain: ME, metabolism
 Bungarotoxins: ME, metabolism
 *Corticosterone: PD, pharmacology
 Drug Implants
 *Evoked Potentials, Auditory: DE, drug effects
 Evoked Potentials, Auditory: PH, physiology
 Mice
 Mice, Inbred C3H
 Mice, Mutant Strains
 Nicotine: PD, pharmacology
 Nicotinic Agonists: PD, pharmacology
 Receptors, Nicotinic: DF, deficiency
 Research Support, U.S. Gov't, P.H.S.

*Startle Reaction: DE, drug effects

Startle Reaction: PH, physiology

RN 50-22-6 (Corticosterone); 54-11-5 (Nicotine)

CN 0 (Anti-Inflammatory Agents); 0 (Bungarotoxins); 0 (Drug
Implants); 0 (Nicotinic Agonists); 0 (Receptors, Nicotinic); 0
(alpha-bungarotoxin receptor)

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ENTRY

SESSION

FULL ESTIMATED COST

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SINCE FILE

TOTAL

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SESSION

FULL ESTIMATED COST

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=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic and inflamm? and (tumor necrosis factor or tnf)

257 ALPHA7

1538591 ALPHA

2538498 7

5868 ALPHA-7

(ALPHA(W) 7)

1538591 ALPHA

2538498 7

5868 ALPHA 7

(ALPHA(W) 7)

34587 NICOTINIC

1097 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC

213143 INFLAMM?

335796 TUMOR

101219 NECROSIS
893137 FACTOR
55469 TUMOR NECROSIS FACTOR
(TUMOR (W) NECROSIS (W) FACTOR)
54228 TNF

L8 12 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S) NICOTINIC AND INFLAMM? AND
(TUMOR NECROSIS FACTOR OR TNF)

=> d 1-12 all

L8 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:363636 CAPLUS

ED Entered STN: 28 Apr 2005

TI Activation of **.alpha.7 nicotinic**

acetylcholine receptor by nicotine selectively up-regulates
cyclooxygenase-2 and prostaglandin E2 in rat microglial cultures

AU De Simone, Roberta; Ajmone-Cat, Maria Antonietta; Carnevale, Daniela;
Minghetti, Luisa

CS Department of Cell Biology and Neurosciences, Section of Degenerative and
Inflammatory Neurological Diseases, Istituto Superiore di Sanita, Rome,
Italy

SO Journal of Neuroinflammation (2005), 2, No pp. given

CODEN: JNOEB3; ISSN: 1742-2094

URL: <http://www.jneuroinflammation.com/content/pdf/1742-2094-2-4.pdf>

PB BioMed Central Ltd.

DT Journal; (online computer file)

LA English

CC 2 (Mammalian Hormones)

AB Background: Nicotinic acetylcholine (ACh) receptors are ligand-gated

pentameric ion channels whose main function is to transmit signals for the
neurotransmitter ACh in peripheral and central nervous system. However,

the **.alpha.7 nicotinic** receptor has been

recently found in several non-neuronal cells and described as an important
regulator of cellular function. Nicotine and ACh have been recently

reported to inhibit **tumor necrosis factor**

- α (**TNF- α**) production in human macrophages as well as in

mouse microglial cultures. In the present study, we investigated whether
the stimulation of **.alpha.7 nicotinic**

receptor by the specific agonist nicotine could affect the functional
state of activated microglia by promoting and/or inhibiting the release of
other important proinflammatory and lipid mediator such as prostaglandin

E2. Methods: Expression of **.alpha.7 nicotinic**

receptor in rat microglial cell was examined by RT-PCR, immunofluorescence
staining and Western blot. The functional effects of $\alpha 7$ receptor

activation were analyzed in resting or lipopolysaccharide (LPS) stimulated
microglial cells pre-treated with nicotine. Culture media were assayed

for the levels of **tumor necrosis factor**,

interleukin-1 β , nitric oxide, interleukin-10 and prostaglandin E2.

Total RNA was assayed by RT-PCR for the expression of COX-2 mRNA.

Results: Rat microglial cells express **.alpha.7**

nicotinic receptor, and its activation by nicotine

dose-dependently reduces the LPS-induced release of **TNF- α** ,

but has little or no effect on nitric oxide, interleukin-10 and

interleukin-1 β . By contrast, nicotine enhances the expression of

cyclooxygenase-2 and the synthesis of one of its major products,

prostaglandin E2. Conclusions: Since prostaglandin E2 modulates several

macrophage and lymphocyte functions, which are instrumental for

inflammatory resolution, our study further supports the existence of

a brain cholinergic antiinflammatory pathway mediated by α

7 nicotinic receptor that could be potentially exploited

for novel treatments of several neuropathologies in which local

inflammation, sustained by activated microglia, plays a crucial
role.

L8 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:311613 CAPLUS
ED Entered STN: 12 Apr 2005
TI Cholinergic stimulation blocks endothelial cell activation and leukocyte recruitment during **inflammation**
AU Saeed, Rubina W.; Varma, Santosh; Peng-Nemeroff, Tina; Sherry, Barbara; Balakhaneh, David; Huston, Jared; Tracey, Kevin J.; Al-Abed, Yousef; Metz, Christine N.
CS Laboratory of Medicinal Biochemistry, Institute for Medical Research at North Shore-LIJ, Manhasset, NY, 11030, USA
SO Journal of Experimental Medicine (2005), 201(7), 1113-1123
CODEN: JEMEAU; ISSN: 0022-1007
PB Rockefeller University Press
DT Journal
LA English
CC 2 (Mammalian Hormones)
AB Endothelial cell activation plays a critical role in regulating leukocyte recruitment during **inflammation** and infection. Based on recent studies showing that acetylcholine and other cholinergic mediators suppress the production of proinflammatory cytokines via the $\alpha 7$ **nicotinic** acetylcholine receptor ($\alpha 7$ nAChR) expressed by macrophages and our observations that human microvascular endothelial cells express the **.alpha.7** nAChR, we examined the effect of cholinergic stimulation on endothelial cell activation in vitro and in vivo. Using the Shwartzman reaction, we observed that nicotine (2 mg/kg) and the novel cholinergic agent CAP55 (12 mg/kg) inhibit endothelial cell adhesion mol. expression. Using endothelial cell cultures, we observed the direct inhibitory effects of acetylcholine and cholinergic agents on **tumor necrosis factor (TNF)**-induced endothelial cell activation. Mecamylamine, an nAChR antagonist, reversed the inhibition of endothelial cell activation by both cholinergic agonists, confirming the antiinflammatory role of the nAChR cholinergic pathway. In vitro mechanistic studies revealed that nicotine blocked **TNF**-induced nuclear factor- κ B nuclear entry in an inhibitor κ B (I κ B) α - and I κ B ϵ -dependent manner. Finally, with the carrageenan air pouch model, both vagus nerve stimulation and cholinergic agonists significantly blocked leukocyte migration in vivo. These findings identify the endothelium, a key regulator of leukocyte trafficking during **inflammation**, as a target of anti-**inflammatory** cholinergic mediators.

RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Abbruscato, T; J Pharm Sci 2002, V91, P2525 CAPLUS
- (2) Abdulla, F; Psychopharmacology (Berl) 1996, V124, P323 CAPLUS
- (3) Bleul, C; J Exp Med 1996, V184, P1101 CAPLUS
- (4) Borovikova, L; Auton Neurosci 2000, V85, P141 CAPLUS
- (5) Borovikova, L; Nature 2000, V405, P458 CAPLUS
- (6) Branch, D; J Immunol Methods 1991, V143, P251 CAPLUS
- (7) Brioni, J; Adv Pharmacol 1997, V37, P153 CAPLUS
- (8) Cines, D; Blood 1998, V91, P3527 CAPLUS
- (9) Cronstein, B; Proc Natl Acad Sci USA 1992, V89, P9991 CAPLUS
- (10) Damaj, M; J Pharmacol Exp Ther 1993, V266, P1330 CAPLUS
- (11) Damaj, M; Neuropharmacology 2000, V39(13), P2785 CAPLUS
- (12) Eliakim, R; Isr Med Assoc J 2003, V5, P178 CAPLUS
- (13) Fu, Y; J Pharmacol Exp Ther 1998, V284, P1188 CAPLUS
- (14) Garcia-Ramallo, E; J Immunol 2002, V169, P6467 CAPLUS
- (15) Garcia-Ramallo, E; J Immunol 2002, V169, P6467 CAPLUS
- (16) Guslandi, M; J Gastroenterol 1996, V31, P627 MEDLINE
- (17) Hakki, A; Int Immunopharmacol 2002, V2, P1403 CAPLUS
- (18) Heeschen, C; J Clin Invest 2002, V110, P527 CAPLUS
- (19) Hidari, K; J Biol Chem 1997, V272, P28750 CAPLUS
- (20) Kunkel, E; J Immunol 2000, V164, P3301 CAPLUS
- (21) Lawand, N; Pain 1999, V80, P291 CAPLUS
- (22) Levin, E; Psychopharmacology (Berl) 1996, V123, P88 CAPLUS
- (23) Ley, K; Immunol Rev 2002, V186, P8 CAPLUS

- (24) Li, Z; Mol Cell Biol 1997, V17, P6184 CAPLUS
- (25) Macklin, K; J Pharmacol Exp Ther 1998, V287, P435 CAPLUS
- (26) Middlebrook, A; J Immunol 2002, V169, P2915 CAPLUS
- (27) Moccia, F; Am J Physiol Heart Circ Physiol 2004, V286, PH486 CAPLUS
- (28) Pabst, M; J Periodontol 1995, V66, P1047 CAPLUS
- (29) Perez, R; Eur J Cancer 1993, V29A, P395 CAPLUS
- (30) Pullan, R; N Engl J Med 1994, V330, P811 MEDLINE
- (31) Sandborn, W; Ann Intern Med 1997, V126, P364 CAPLUS
- (32) Sherry, B; J Inflamm 1995, V45, P85 CAPLUS
- (33) Simeonidis, S; Proc Natl Acad Sci USA 1997, V94, P14372 CAPLUS
- (34) Simon, S; J Immunol 2000, V164, P4348 CAPLUS
- (35) Sopori, M; Adv Exp Med Biol 1998, V437, P279 CAPLUS
- (36) Sugano, N; Biochem Biophys Res Commun 1998, V252, P25 CAPLUS
- (37) Summers, A; Life Sci 2003, V72, P2091 CAPLUS
- (38) Sunderkotter, C; Exp Dermatol 2001, V10, P391 MEDLINE
- (39) Sykes, A; Inflamm Res 2000, V49, P311 CAPLUS
- (40) Tracey, K; Nature 2002, V420, P853 CAPLUS
- (41) Van Dijk, J; Eur J Pharmacol 1995, V278, PR11 CAPLUS
- (42) Villablanca, A; J Appl Physiol 1998, V84, P2089 CAPLUS
- (43) Wang, H; Nat Med 2004, V10, P1216 CAPLUS
- (44) Wang, H; Nature 2003, V421, P384 CAPLUS
- (45) Wang, Y; Mol Pharmacol 2001, V60, P1201 CAPLUS
- (46) Whiteside, S; EMBO J 1997, V16, P1413 CAPLUS
- (47) Woodruff-Pak, D; Behav Brain Res 2003, V143, P159 CAPLUS
- (48) Wu, D; Atherosclerosis 1999, V147, P297 CAPLUS

L8 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:907341 CAPLUS

DN 141:374660

ED Entered STN: 31 Oct 2004

TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis

AU Wang, Hong; Liao, Hong; Ochani, Mahendar; Justiniani, Marilou; Lin, Xinchun; Yang, Lihong; Al-Abed, Yousef; Wang, Haichao; Metz, Christine; Miller, Edmund J.; Tracey, Kevin J.; Ulloa, Luis

CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, Manhasset, NY, 11030, USA

SO Nature Medicine (New York, NY, United States) (2004), 10(11), 1216-1221
CODEN: NAMEFI; ISSN: 1078-8956

PB Nature Publishing Group

DT Journal

LA English

CC 1-11 (Pharmacology)

Section cross-reference(s): 2

AB Physiol. anti-inflammatory mechanisms can potentially be exploited for the treatment of inflammatory disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or tumor necrosis factor- α (TNF- α). Nicotinic stimulation prevents activation of the NF- κ B pathway and inhibits HMGB1 secretion through a specific 'nicotinic anti-inflammatory pathway' that requires the α 7 nicotinic acetylcholine receptor (α 7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in exptl. models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiol. inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the α 7nAChR might have therapeutic potential for the treatment of sepsis.

ST cholinergic agonist nicotine acetylcholine HMGB1 sepsis antiinflammatory

IT High-mobility group proteins

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(HMGB1; cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

IT Transcription factors
 RL: MSC (Miscellaneous)
 (NF- κ B (nuclear factor of κ light chain gene enhancer in B-cells); cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

IT Anti-inflammatory agents
 Cholinergic agonists
 Human
 Macrophage
 Sepsis
 (cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

IT Nicotinic receptors
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (α 7; cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

IT 54-11-5. Nicotine
 RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

IT 51-84-3, Acetylcholine, biological studies
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Abraham, E; Crit Care Med 2001, V29, P503 CAPLUS
- (2) Abraham, E; Lancet 1998, V351, P929 CAPLUS
- (3) Andersson, U; J Exp Med 2000, V192, P565 CAPLUS
- (4) Andersson, U; J Intern Med 2004, V255, P344 CAPLUS
- (5) Ando, Y; Ann Intern Med 1997, V127, P491 MEDLINE
- (6) Angus, D; Am J Respir Crit Care Med 2001, V163, P1389 MEDLINE
- (7) Baeuerle, P; Annu Rev Immunol 1994, V12, P141 CAPLUS
- (8) Bernik, T; J Exp Med 2002, V195, P781 CAPLUS
- (9) Bonaldi, T; EMBO J 2003, V22, P5551 CAPLUS
- (10) Borovikova, L; Nature 2000, V405, P458 CAPLUS
- (11) Bustin, M; Sci STKE 2002, V151
- (12) Calandra, T; Nat Med 2000, V6, P164 CAPLUS
- (13) Czura, C; Adv Immunol 2004, V84, P181 CAPLUS
- (14) Derijard, B; Science 1995, V267, P682 CAPLUS
- (15) Dinarello, C; Curr Opin Pharmacol 2004, V4, P378 CAPLUS
- (16) Dinarello, C; FASEB J 1994, V8, P1314 CAPLUS
- (17) Eskandari, M; J Immunol 1992, V148, P2724 CAPLUS
- (18) Fisher, C; JAMA 1994, V271, P1836
- (19) Friedman, G; Crit Care Med 1998, V26, P2078 MEDLINE
- (20) Guarini, S; Circulation 2003, V107, P1189
- (21) Hogg, R; Rev Physiol Biochem Pharmacol 2003, V147, P1 CAPLUS
- (22) Jick, H; N Engl J Med 1983, V308, P261 MEDLINE
- (23) Karlin, A; Nat Rev Neurosci 2002, V3, P102 CAPLUS
- (24) Lee, J; Nature 1994, V372, P739 CAPLUS
- (25) Li, J; Mol Med 2003, V9, P37 CAPLUS
- (26) Li, Q; Nat Rev Immunol 2002, V2, P725 CAPLUS
- (27) Marshall, J; Crit Care Med 2001, V29, P599 MEDLINE
- (28) Martin, T; Nat Med 2000, V6, P140 CAPLUS
- (29) Rampton, D; Lancet 1984, V1, P168 MEDLINE
- (30) Rendon-Mitchell, B; J Immunol 2003, V170, P3890 CAPLUS
- (31) Riedemann, N; Nat Med 2003, V9, P517 CAPLUS
- (32) Sands, K; JAMA 1997, V278, P234 MEDLINE
- (33) Scaffidi, P; Nature 2002, V418, P191 CAPLUS
- (34) Tracey, K; Nature 1987, V330, P662 CAPLUS
- (35) Tracey, K; Nature 2002, V420, P853 CAPLUS

- (36) Ulloa, L; Arthritis Rheum 2003, V48, P876 CAPLUS
- (37) Ulloa, L; EMBO J 1993, V12, P1633 CAPLUS
- (38) Ulloa, L; Nature 1999, V397, P710 CAPLUS
- (39) Ulloa, L; Proc Natl Acad Sci USA 2002, V99, P12351 CAPLUS
- (40) Unwin, N; Nature 1995, V373, P37 CAPLUS
- (41) Wang, H; Nat Med 2004, V10, P124 CAPLUS
- (42) Wang, H; Nature 2003, V421, P384 CAPLUS
- (43) Wang, H; Science 1999, V285, P248 CAPLUS
- (44) Wess, J; Annu Rev Pharmacol Toxicol 2004, V44, P423 CAPLUS
- (45) Yan, J; Nat Med 2004, V10, P161 CAPLUS
- (46) Yang, H; Proc Natl Acad Sci USA 2004, V101, P296 CAPLUS

L8 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:733565 CAPLUS

DN 142:127318

ED Entered STN: 09 Sep 2004

TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120

AU Giunta, B.; Ehrhart, J.; Townsend, K.; Sun, N.; Vendrame, M.; Shytle, D.; Tan, J.; Fernandez, F.

CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, Tampa, FL, 33613, USA

SO Brain Research Bulletin (2004), 64(2), 165-170

CODEN: BRBUDU; ISSN: 0361-9230

PB Elsevier Inc.

DT Journal

LA English

CC 1-11 (Pharmacology)

AB Chronic brain inflammation is the common final pathway in the majority of neurodegenerative diseases and central to this phenomenon is the immunol. activation of brain mononuclear phagocyte cells, called microglia. This inflammatory mechanism is a central component of HIV-associated dementia (HAD). In the healthy state, there are endogenous signals from neurons and astrocytes, which limit excessive central nervous system (CNS) inflammation. However, the signals controlling this process have not been fully elucidated. Studies on the peripheral nervous system suggest that a cholinergic anti-inflammatory pathway regulates systemic inflammatory response by way of acetylcholine acting at the $\alpha 7$ nicotinic acetylcholine receptor ($\alpha 7$ nAChR) found on blood-borne macrophages. Recent data from our laboratory indicates that cultured microglial cells also express this same receptor and that microglial anti-inflammatory properties are mediated through it and the p44/42 mitogen-activated protein kinase (MAPK) system. Here we report for the first time the creation of an in vitro model of HAD composed of cultured microglial cells synergistically activated by the addition of IFN- γ and the HIV-1 coat glycoprotein, gp120. Furthermore, this activation, as measured by TNF- α and nitric oxide (NO) release, is synergistically attenuated through the $\alpha 7$ nAChR and p44/42 MAPK system by pretreatment with nicotine, and the cholinesterase inhibitor, galantamine. Our findings suggest a novel therapeutic combination to treat or prevent the onset of HAD through this modulation of the microglia inflammatory mechanism.

ST nicotine galantamine synergistic drug interaction microglial activation HIV1 dementia

IT Drug targets

Nicotinic antagonists

(co-pretreatment of mouse primary microglial cell with $\alpha 7$ nAChR inhibitor α -bungarotoxin reduced nicotine, galantamine inhibition on TNF- α production, NO release induced by HIV-1 gp120/IFN- γ and reduced p44/42 MAPK phosphorylation)

IT Anti-inflammatory agents

Human immunodeficiency virus 1

(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced TNF- α production and NO

- release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT Mental disorder
(dementia; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced HAD-like microglial activation through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT Drug interactions
(synergistic; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT Nicotinic receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT Interferons
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(γ ; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT 11032-79-4, α -Bungarotoxin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(co-pretreatment of mouse primary microglial cell with α 7nAChR inhibitor α -bungarotoxin reduced nicotine, galantamine inhibition on **TNF**- α production, NO release induced by HIV-1 gp120/IFN- γ and reduced p44/42 MAPK phosphorylation)
- IT 9001-08-5, Cholinesterase 10102-43-9, Nitric oxide, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT 54-11-5, Nicotine 357-70-0, Galantamine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- IT 142243-02-5
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(p44/42; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN- γ -induced **TNF**- α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)
- RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Aloisi, F; J Neuroimmunol 2000, V107, P111 CAPLUS
- (2) Anderson, E; J Acquir Immune Defic Syndr 2002, V31(Suppl 2), PS43
- (3) Bansal, A; Brain Res 2000, V879, P42 CAPLUS
- (4) Garden, G; Glia 2002, V40, P240
- (5) Haughey, N; J Acquir Immune Defic Syndr 2002, V31(Suppl 2), PS55

- (6) Kaneko, S; Brain Res 1997, V765, P135 CAPLUS
- (7) Llano, A; J Virol 2001, V75, P10319 CAPLUS
- (8) Matyszak, M; Eur J Immunol 1999, V29, P3063 CAPLUS
- (9) Nguyen, V; J Immunol 2000, V165, P6235 CAPLUS
- (10) Polazzi, E; Rev Neurosci 2002, V13, P221
- (11) Samochocki, M; J Pharmacol Exp Ther 2003, V305, P1024 CAPLUS
- (12) Santos, M; Mol Pharmacol 2002, V61, P1222 CAPLUS
- (13) Schuenke, K; J Neurovirol 2003, V9, P346
- (14) Shytle, R; J Neurochem 2004, V89, P337 CAPLUS
- (15) Tan, J; J Biol Chem 2000, V275, P37224 CAPLUS
- (16) Tan, J; Science 1999, V286, P2352 CAPLUS
- (17) Torre, D; Lancet Infect Dis 2002, V2, P273 CAPLUS
- (18) Wang, H; Nature 2003, V421, P384 CAPLUS

L8 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:633526 CAPLUS

DN 141:167817

ED Entered STN: 06 Aug 2004

TI Treatment of diseases with alpha-7 NACH receptor full agonists

IN Groppi, Vincent Edward, Jr.; Rogers, Bruce Nelsen; Rudmann, Daniel Gregory

PA Pharmacia & Upjohn Company, USA

SO PCT Int. Appl., 142 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K031-439

ICS A61P009-10; A61P019-02

CC 1-11 (Pharmacology)

Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004064836	A2	20040805	WO 2004-IB115	20040112
	WO 2004064836	A3	20041223		
	W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ			

PRAI US 2003-441801P P 20030122

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004064836	ICM	A61K031-439
	ICS	A61P009-10; A61P019-02

OS MARPAT 141:167817

AB The present invention relates to compositions and methods to treat diseases or conditions with **alpha-7 nicotinic** acetylcholine receptor (AChR) full agonists by decreasing levels of **tumor necrosis factor-alpha** and/or by stimulating vascular angiogenesis.

ST nicotinic acetylcholine receptor agonist quinuclidinylheteroarylamine cancer diabetes angiogenesis therapy

IT **Inflammation**

(Crohn's disease; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Intestine, disease

(Crohn's; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Mammary gland, neoplasm

(Paget's disease; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Bone, disease

(Paget's; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Arthritis
(Reiter's syndrome; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Leukemia
(acute myelogenous; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Respiratory distress syndrome
(adult; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Heart, disease
(angina pectoris, stable; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Cachexia
(cancerous; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Ischemia
(cardiac; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Malaria
(cerebral; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Leukemia
(chronic myelocytic; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Dermatitis
(contact; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Muscle, disease
(degeneration; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Bone, disease
(fracture; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Infection
(herpes zoster; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Intestine, disease
(inflammatory; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Reperfusion
(injury; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Autoimmune disease
(insulin-dependent diabetes mellitus; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Diabetes mellitus
(insulin-dependent; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Heart, disease
(ischemia; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Brain, disease
(malaria; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Muscle, disease
Pain
(myalgia; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Diabetes mellitus
(non-insulin-dependent; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Adenoviridae

- Analgesics
- Anaphylaxis
- Angiogenesis
- Anti-inflammatory agents
- Antibacterial agents
- Antidiabetic agents
- Antiemetics
- Antitumor agents
- Antiviral agents
- Asthma
- Atherosclerosis
- Burn
- Cytomegalovirus
- Fever and Hyperthermia
- Gout
- Human
- Human herpesvirus
- Human immunodeficiency virus 1
- Human immunodeficiency virus 2
- Human immunodeficiency virus 3
- Infection

Inflammation

- Influenza
- Ischemia
- Mammalia
- Multiple myeloma
- Multiple sclerosis
- Osteoarthritis
- Osteoporosis
- Pain
- Psoriasis
- Rheumatoid arthritis
- Sepsis
- Surgery
- Transplant rejection
- Wound healing

(preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

- IT Injury
 - (reperfusion; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT Bone
 - (resorption; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT **Inflammation**
 - Nose, disease
 - (rhinitis; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT Shock (circulatory collapse)
 - (septic; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT **Inflammation**
 - Spinal column, disease
 - (spondylitis, rheumatoid; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT Brain, disease
 - (stroke; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT Shock (circulatory collapse)
 - (toxic shock syndrome; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT Brain, disease
 - (trauma; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
- IT **Inflammation**

Intestine, disease
(ulcerative colitis; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Eye, disease
Inflammation
(uveitis; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT **Nicotinic receptors**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7, agonists; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Pancreatic islet of Langerhans
(β -cell; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 50-47-5, Desipramine 51-64-9, Dextroamphetamine 72-69-5, Nortriptyline 113-45-1, Methyl phenidate 300-62-9, Amphetamine 2152-34-3, Pemoline 34911-55-2, Bupropion 54910-89-3, Fluoxetine 68693-11-8, Modafinil 71620-89-8, Reboxetine 83015-26-3, Atomoxetine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(combination therapy; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 473795-29-8P, trans-(tert-Butoxycarbonylamino)-4-(2-hydroxyethyl)-1-(phenylmethyl)pyrrolidine 500556-92-3P
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(intermediate; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 473795-30-1P, (+)-trans-3-(tert-Butoxycarbonylamino)-4-(2-hydroxyethyl)-1-(phenylmethyl)pyrrolidine 473795-31-2P, (-)-trans-3-(tert-Butoxycarbonylamino)-4-(2-hydroxyethyl)-1-(phenylmethyl)pyrrolidine 500556-94-5P 500556-95-6P
RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 272-23-1P, Thieno[2,3-b]pyridine 704-91-6P, 1H-Indazole-6-carboxylic acid 1073-31-0P, 3,4-Thiophenedicarboxaldehyde 1074-99-3P, 2,4-Dimethyl-5-nitropyridine 1851-22-5P, 3-Chloropyridine 1-oxide 4442-54-0P, 2,3-Dihydro-1,4-benzodioxine-6-carboxylic acid 5832-38-2P, 2-Formyl-4-methyl-5-nitropyridine 6624-49-3P, 3-Isoquinolinecarboxylic acid 7040-07-5P, Furan-2,3-dicarboxaldehyde 7137-33-9P, Benzoc[b]thiophene-2,3-dicarboxaldehyde 13452-14-7P 14757-78-9P 15112-41-1P, 1,3-Benzoxazole-5-carboxylic acid 18853-32-2P, 3,4-Dicyanothiophene 19005-93-7P, 1H-Indole-2-carboxaldehyde 21344-31-0P, Thieno[2,3-b]pyridine-5-carbonitrile 21472-88-8P, Ethyl 5-hydroxy-6-oxo-1,2,3,6-tetrahydropyridine-4-carboxylate 21473-14-3P 21473-16-5P, exo-1-Azabicyclo[2.2.1]heptan-3-ol 21492-03-5P, cis-4-(Hydroxymethyl)piperidin-3-ol 23680-40-2P, Methyl 3-bromopropionate 24621-70-3P, 1H-Indole-2-methanol 25557-50-0P, Thieno[2,3-b]pyridine-7-oxide 28872-85-7P, 2-(3-Bromo-2-furyl)-1,3-dioxolane 34668-25-2P, Ethyl furo[2,3-b]pyridine-2-carboxylate 34668-26-3P, Furo[2,3-b]pyridine-2-carboxylic acid 35350-37-9P 36404-88-3P, 2-Chloronicotinaldehyde 38180-46-0P, 3-Chloropyridine-2-carbonitrile 40789-79-5P, 2-(Benzoyloxy)-1-nitroethane 56538-57-9P, [(Benzoyloxy)carbonyl]amino(hydroxy)acetic acid 58123-77-6P, 3-Hydroxy-4-iodobenzoic acid 58237-86-8P 58621-52-6P, 1-(3,4-Dihydro-2H-chromen-6-yl)ethanone 59944-76-2P, Thieno[2,3-b]pyridine-2-carboxylic acid 60249-08-3P, Thieno[2,3-c]pyridine-5-carboxylic acid 60249-09-4P, Thieno[3,2-c]pyridine-6-carboxylic acid 65140-15-0P, 2-Aminothiophene hexachlorostannate 65898-38-6P, 5-Indancarboxylic acid 68867-17-4P, 1,3-Benzothiazole-5-carboxylic acid 72990-37-5P, 3-Chloroisonicotinaldehyde 74214-62-3P, Ethyl 9H- β -carboline-3-

carboxylate 76429-73-7P, 2,3-Dihydrobenzofuran-5-carboxylic acid
 86236-37-5P, Thieno[3,2-c]pyridine-2-carboxylic acid 86344-86-7P,
 Thieno[2,3-b]pyridine-6-carbonitrile 88568-95-0P 89524-99-2P
 90322-32-0P 90721-27-0P, Benzofuran-5-carboxylic acid 91486-39-4P,
 4-(2-Chlorophenyl)-1H-pyrazole 94413-64-6P, Methyl 2-cyanoisonicotinate
 94413-69-1P 103203-84-5P 107407-80-7P, Ethyl pyrrolo[1,2-c]pyrimidine-
 3-carboxylate 108763-47-9P, Methyl benzofuran-5-carboxylate
 109274-83-1P, Ethyl 3-hydroxyfuro[2,3-b]pyridine-2-carboxylate
 111042-90-1P, Methyl 3-aminothieno[3,2-b]pyridine-2-carboxylate
 114077-82-6P, 4-Chloropyridine-3-carboxaldehyde 116538-95-5P,
 Thieno[3,2-b]pyridine-6-carbonitrile 117390-38-2P, Thieno[2,3-b]pyridine-
 5-carboxylic acid 117390-39-3P, Thieno[3,2-b]pyridine-6-carboxylic acid
 119694-70-1P, 2-(1,3-Dioxolan-2-yl)-4-methyl-5-nitropyridine
 129975-13-9P, trans-4-Nitro-1-(phenylmethyl)-3-pyrrolidineethanoic acid
 ethyl ester 130473-24-4P, 5-(1,3-Dioxolan-2-yl)-1H-pyrrolo[2,3-
 c]pyridine 130473-26-6P, 1H-Pyrrolo[2,3-c]pyridine-5-carboxaldehyde
 130473-27-7P, 1H-Pyrrolo[2,3-c]pyridine-5-carboxylic acid 131489-60-6P,
 Ethyl (E)-4-(benzylamino)-2-butenate 136117-69-6P 144017-84-5P,
 trans-4-Amino-1-(phenylmethyl)-3-pyrrolidineethanoic acid ethyl ester
 153566-63-3P, (3R)-1-((S)-1-Phenethyl)-3-(cyanomethyl)pyrrolidine
 153780-28-0P, Ethyl pyrrolo[1,2-a]pyrazine-3-carboxylate 154235-77-5P,
 6-Benzoxazolecarboxylic acid 154650-88-1P, Methyl thieno[2,3-b]pyridine-
 2-carboxylate 156571-65-2P 157942-12-6P, Methyl 3-hydroxy-4-
 iodobenzoate 160893-70-9P 173340-19-7P, (3S)-1-((S)-1-Phenethyl)-5-oxo-
 3-pyrrolidinecarboxylic acid 173724-95-3P, (3S)-1-((S)-1-Phenethyl)-3-
 (hydroxymethyl)pyrrolidine 174676-79-0P, (3R)-Methyl
 1-((S)-1-phenylethyl)pyrrolidine-3-acetate 181873-33-6P 191150-86-4P,
 Benzyl cis-3-hydroxy-4-[[[(4-methylphenyl)sulfonyl]oxy]methyl]piperidine-1-
 carboxylate 191150-87-5P, Benzyl cis-3-hydroxy-4-
 (hydroxymethyl)piperidine-1-carboxylate 197080-73-2P 206989-54-0P,
 tert-Butyl 4-(2-oxopropyl)piperidine-1-carboxylate 208519-37-3P,
 2-Chloro-6-(hydroxymethyl)-4-iodo-3-pyridinol 208519-38-4P,
 2-Chloro-6-(hydroxymethyl)-4-[(trimethylsilyl)ethynyl]-3-pyridinol
 208519-39-5P, (7-Chlorofuro[2,3-c]pyridin-5-yl)methanol 208519-40-8P,
 7-Chlorofuro[2,3-c]pyridine-5-carboxaldehyde 208519-41-9P,
 2-Chloro-6-(hydroxymethyl)-3-pyridinol 221128-29-6P,
 trans-4-[[[(1,1-Dimethylethoxy)carbonyl]amino]-1-(phenylmethyl)-3-
 pyrrolidineethanoic acid ethyl ester 253332-81-9P, Methyl
 thieno[2,3-c]pyridine-5-carboxylate 253332-82-0P, Methyl
 thieno[3,2-c]pyridine-6-carboxylate 280752-78-5P, (6-Bromo-2,3-dihydro-
 1,4-benzodioxin-2-yl)methanol 347187-30-8P, Thieno[3,2-b]pyridine-2-
 carboxylic acid 412023-64-4P 441044-90-2P, [7-Chloro-2-
 (trimethylsilyl)furo[2,3-c]pyridin-5-yl)methanol 473795-32-3P,
 exo-3-(tert-Butoxycarbonylamino)-1-azabicyclo[2.2.1]heptane
 473795-33-4P, exo-3-Amino-1-azabicyclo[2.2.1]heptane bis(p-
 toluenesulfonate) 473795-35-6P, endo-3-Azido-1-azabicyclo[2.2.1]heptane
 473795-36-7P, endo-3-Amino-1-azabicyclo[2.2.1]heptane bis(p-
 toluenesulfonate) 473795-39-0P, endo-1-Azabicyclo[3.2.1]octan-3-amine
 dihydrochloride 473795-40-3P, tert-Butyl 4-(2-oxopropylidene)piperidine-
 1-carboxylate 473795-43-6P, tert-Butyl 4-(3-bromo-2-oxopropyl)piperidine-
 1-carboxylate 473795-46-9P, 1-Bromo-3-(piperidin-4-yl)acetone
 trifluoroacetate 473795-47-0P, 1-Azabicyclo[3.2.2]nonan-3-one
 478148-53-7P, 7-Chlorofuro[2,3-c]pyridine-5-carboxylic acid
 478148-54-8P, 2,3-Dihydrofuro[2,3-c]pyridine-5-carboxylic acid
 478148-59-3P, 5-Hydroxymethyl-2-trimethylsilylfuro[2,3-c]pyridine
 478148-60-6P, Furo[2,3-c]pyridin-5-ylmethanol 478148-61-7P,
 Furo[2,3-c]pyridine-5-carboxaldehyde 478148-62-8P, Furo[2,3-c]pyridine-5-
 carboxylic acid 478148-64-0P, [6-Chloro-4-iodo-5-[(2-methyl-2-
 propenyl)oxy]-2-pyridinyl]methanol 478148-65-1P, (7-Chloro-3,3-dimethyl-
 2,3-dihydrofuro[2,3-c]pyridin-5-yl)methanol 478148-66-2P,
 (3,3-Dimethyl-2,3-dihydrofuro[2,3-c]pyridin-5-yl)methanol 478148-67-3P,
 3,3-Dimethyl-2,3-dihydrofuro[2,3-c]pyridine-5-carboxaldehyde
 478148-68-4P, 3,3-Dimethyl-2,3-dihydrofuro[2,3-c]pyridine-5-carboxylic
 acid 478148-70-8P, (7-Chloro-2-methylfuro[2,3-c]pyridin-5-yl)methanol
 478148-71-9P, (2-Methylfuro[2,3-c]pyridin-5-yl)methanol 478148-72-0P,

2-Methylfuro[2,3-c]pyridine-5-carboxaldehyde 478148-73-1P,
 2-Methylfuro[2,3-c]pyridine-5-carboxylic acid 478148-79-7P, Ethyl
 3-[[[(trifluoromethyl)sulfonyl]oxy]furo[2,3-b]pyridine-2-carboxylate
 478148-81-1P, 3-(Allyloxy)-2-chloro-6-(hydroxymethyl)-4-iodopyridine
 478148-82-2P, (7-Chloro-3-methyl-2,3-dihydrofuro[2,3-c]pyridin-5-
 yl)methanol 478148-83-3P, (3-Methyl-2,3-dihydrofuro[2,3-c]pyridin-5-
 yl)methanol 478148-84-4P, (3-Methyl-2,3-dihydrofuro[2,3-c]pyridin-5-
 yl)methyl acetate 478148-85-5P, (3-Methylfuro[2,3-c]pyridin-5-
 yl)methanol 478148-86-6P, 3-Methylfuro[2,3-c]pyridine-5-carboxaldehyde
 478148-87-7P, 3-Methylfuro[2,3-c]pyridine-5-carboxylic acid
 478148-89-9P, 3-Ethylfuro[2,3-c]pyridine-5-carboxylic acid 478148-91-3P,
 3-Isopropylfuro[2,3-c]pyridine-5-carboxylic acid 478148-97-9P,
 Thieno[2,3-b]pyridine-6-carboxylic acid 478148-99-1P, Ethyl
 thieno[2,3-c]pyridine-2-carboxylate 478149-00-7P, Thieno[2,3-c]pyridine-
 2-carboxylic acid 478149-02-9P, Methyl thieno[3,2-b]pyridine-2-
 carboxylate 478149-05-2P 478149-07-4P, Methyl thieno[3,2-c]pyridine-2-
 carboxylate 478149-12-1P, 5-(1,3-Dioxolan-2-yl)-1-methyl-1H-pyrrolo[2,3-
 c]pyridine 478149-13-2P, 1-Methylpyrrolo[2,3-c]pyridine-5-carboxaldehyde
 478149-14-3P, 1-Methylpyrrolo[2,3-c]pyridine-5-carboxylic acid
 478149-16-5P 478149-20-1P, (Furo[2,3-c]pyridin-5-yl)methyl acetate
 478149-21-2P, (3-Chlorofuro[2,3-c]pyridin-5-yl)methanol 478149-22-3P,
 3-Chlorofuro[2,3-c]pyridine-5-carboxaldehyde 478149-23-4P,
 3-Chlorofuro[2,3-c]pyridine-5-carboxylic acid 478149-25-6P,
 (3-Bromofuro[2,3-c]pyridin-5-yl)methanol 478149-26-7P,
 3-Bromofuro[2,3-c]pyridine-5-carboxaldehyde 478149-27-8P,
 3-Bromofuro[2,3-c]pyridine-5-carboxylic acid 478149-29-0P, Methyl
 furo[3,2-c]pyridine-6-carboxylate 478149-30-3P, Furo[3,2-c]pyridine-6-
 carboxylic acid 478149-49-4P, Methyl thieno[3,4-c]pyridine-6-carboxylate
 478149-50-7P, Thieno[3,4-c]pyridine-6-carboxylic acid 478169-65-2P
 478169-68-5P, Methyl 3-hydroxy-4-[(trimethylsilyl)ethynyl]benzoate
 478169-69-6P 478169-70-9P 478169-71-0P 478169-72-1P 478169-77-6P
 500556-90-1P 500556-91-2P 508201-49-8P, (3S)-1-((S)-1-Phenethyl)-3-
 (chloromethyl)pyrrolidine 508201-52-3P, (5R)-1-Azabicyclo[3.2.1]octan-3-
 one hydrochloride 508201-54-5P, (5R)-3-Oxo-1-((1S)-1-phenylethyl)-1-
 azonabicyclo[3.2.1]octane chloride 508201-56-7P, (3R,5R)-1-
 Azabicyclo[3.2.1]octan-3-amine dihydrochloride 508201-58-9P,
 1-Azabicyclo[3.2.2]nonan-3-amine bis(4-methylbenzenesulfonate)
 527680-64-4P, 1-(2,4-Diiodophenoxy)butan-2-ol 527680-65-5P
 527680-66-6P 527680-67-7P 527680-73-5P 527680-79-1P 527680-80-4P
 527680-99-5P 527681-05-6P 527681-07-8P 527681-11-4P 527681-12-5P,
 Methyl 2,3-dihydro-1,4-dioxino[2,3-c]pyridine-7-carboxylate
 527681-13-6P, 2,3-Dihydro-1,4-dioxino[2,3-c]pyridine-7-carboxylic acid
 527681-26-1P, Methyl 3-(allyloxy)-4-formylbenzoate 527681-29-4P, Methyl
 3-(allyloxy)-4-vinylbenzoate 527681-32-9P 527681-33-0P 527681-40-9P,
 Ethyl 4-(allyloxy)-3-formylbenzoate 527681-41-0P, Ethyl
 4-(allyloxy)-3-vinylbenzoate 527681-42-1P 527681-43-2P,
 2H-1-Benzopyran-6-carboxylic acid 527681-47-6P, Methyl
 4-hydroxy-3-vinylbenzoate 527681-48-7P, Methyl 3-formyl-4-[(1-methylprop-
 2-enyl)oxy]benzoate 527681-49-8P 527681-51-2P 527681-56-7P,
 2-Chloro-6-(hydroxymethyl)-4-vinylpyridin-3-ol 527681-57-8P,
 [5-(Allyloxy)-6-chloro-4-vinylpyridin-2-yl]methanol 527681-59-0P
 527681-60-3P, (3,4-Dihydro-2H-pyrano[2,3-c]pyridin-6-yl)methanol
 527681-61-4P 527681-62-5P, 3,4-Dihydro-2H-pyrano[2,3-c]pyridine-6-
 carboxylic acid 588702-80-1P, Methyl 2,3-dihydrobenzofuran-5-carboxylate
 588720-10-9P, Ethyl 7-chloropyrrolo[1,2-c]pyrimidine-3-carboxylate
 588720-11-0P, Ethyl 6-chloropyrrolo[1,2-c]pyrimidine-3-carboxylate
 588720-12-1P, Ethyl 6-bromopyrrolo[1,2-c]pyrimidine-3-carboxylate
 588720-13-2P, Pyrrolo[1,2-c]pyrimidine-3-carboxylic acid hydrochloride
 588720-14-3P 588720-15-4P 588720-16-5P 588720-29-0P,
 Imidazo[1,5-a]pyridine-7-carboxylic acid 588720-47-2P 588720-48-3P,
 Pyrrolo[1,2-a]pyrazine-3-carboxylic acid hydrochloride 588720-58-5P
 588720-59-6P 655785-32-3P 655785-40-3P, 4-Nitrophenyl
 4-(2-chlorophenyl)-1H-pyrazole-1-carboxylate 688790-08-1P
 711083-82-8P, (3S)-3-(Phenoxymethyl)-2,3-dihydro-1,4-benzodioxine-6-
 carboxylic acid 712343-12-9P, Thieno[3,4-c]pyridine-6-methanol

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 655785-33-4P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(nAChR agonist; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 473795-11-8P 478148-80-0P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-methylfuro[2,3-c]pyridine-5-carboxamide 478148-90-2P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-isopropylfuro[2,3-c]pyridine-5-carboxamide 478149-24-5P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-bromofuro[2,3-c]pyridine-5-carboxamide 478149-31-4P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-bromothieno[2,3-c]pyridine-5-carboxamide 478149-43-8P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-ethynylfuro[2,3-c]pyridine-5-carboxamide 478149-45-0P, N-[(3S)-1-Azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide 478149-46-1P, N-(1-Azabicyclo[2.2.2]oct-3-yl)furo[2,3-c]pyridine-5-carboxamide 478149-47-2P 478149-53-0P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide 478149-55-2P 478149-58-5P 478149-67-6P 478149-68-7P 478149-72-3P 478149-73-4P 478149-74-5P 478149-78-9P 478149-83-6P 478149-95-0P 478149-96-1P 478150-02-6P 478152-73-7P 478152-78-2P 478169-41-4P 478169-43-6P 478169-45-8P 478169-49-2P 478169-75-4P 478169-89-0P 478170-28-4P 501892-52-0P, N-[(1S,2R,4R)-7-Azabicyclo[2.2.1]hept-2-yl]-1-benzofuran-5-carboxamide 501892-84-8P 501893-00-1P 501893-01-2P, N-[(1S,2R,4R)-7-Azabicyclo[2.2.1]hept-2-yl]thieno[2,3-c]pyridine-5-carboxamide 501893-02-3P 501893-03-4P 501893-10-3P, N-[(1S,2R,4R)-7-Azabicyclo[2.2.1]hept-2-yl]-3-bromofuro[2,3-c]pyridine-5-carboxamide 501893-13-6P 501893-17-0P 501893-18-1P 501893-19-2P 501893-20-5P 501893-23-8P 501897-07-0P 501901-29-7P 501901-30-0P 501901-33-3P 501901-43-5P 501901-47-9P 501901-48-0P 501901-50-4P 508201-60-3P 508201-72-7P 508201-75-0P 508201-78-3P 508201-88-5P 508201-93-2P 508202-02-6P 508202-05-9P 508202-22-0P 508202-68-4P 508203-04-1P 508203-63-2P 521277-79-2P 521278-10-4P 521278-18-2P 527680-56-4P 527681-36-3P 527681-66-9P 588702-81-2P 588702-84-5P 588702-87-8P 588703-09-7P 588703-11-1P 588703-26-8P 588703-34-8P 588703-35-9P 588703-37-1P 588703-38-2P 588703-46-2P 588703-51-9P 588703-53-1P 588704-11-4P 588705-34-4P 588705-35-5P 588705-36-6P 588705-41-3P 588705-43-5P 588705-51-5P 588705-52-6P 588705-80-0P 588720-18-7P 588720-21-2P 588720-37-0P 588720-43-8P 588720-45-0P 588720-54-1P 588720-56-3P 588720-60-9P 588720-69-8P 588723-76-6P 588726-61-8P 588726-81-2P 590369-66-7P 590369-67-8P 590369-75-8P 590370-28-8P 590370-30-2P 590370-42-6P 655785-29-8P 655785-31-2P 655785-35-6P 655785-43-6P 688741-75-5P 711085-63-1P 711085-68-6P 711086-78-1P 711088-12-9P 711089-23-5P 711089-83-7P 711089-98-4P 711090-06-1P 711090-20-9P 712343-13-0P 712343-14-1P 712343-15-2P 712343-17-4P, N-(1-Azabicyclo[2.2.2]oct-3-yl)[1]benzo[b]thieno[3,2-c]pyridine-3-carboxamide 712343-19-6P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(nAChR agonist; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 75-66-1, tert-Butyl mercaptan 95-92-1, Diethyl oxalate 97-65-4, Itaconic acid, reactions 99-06-9, 3-Hydroxybenzoic acid, reactions 106-95-6, Allyl bromide, reactions 108-47-4, 2,4-Lutidine 108-95-2, Phenol, reactions 109-09-1, 2-Chloropyridine 254-04-6, 2H-1-Benzopyran 503-60-6, 1-Chloro-3-methyl-2-butene 591-97-9, 1-Chloro-2-butene 609-40-5, 2-Nitrothiophene 616-45-5, 2-Pyrrolidinone 621-84-1, Benzyl carbamate 623-50-7, Ethyl glycolate 625-48-9, 2-Nitroethanol 626-60-8, 3-Chloropyridine 922-67-8, Methyl propiolate 931-33-9, 4-Bromopyrrole-2-carboxaldehyde 932-41-2, 2,3-Thiophenedicarboxaldehyde

1003-29-8, Pyrrole-2-carboxaldehyde 1066-54-2, Trimethylsilylacetylene
 1067-71-6 1445-45-0, Trimethyl orthoacetate 1452-94-4, Ethyl
 2-chloronicotinate 1458-98-6, 3-Bromo-2-methylpropene 1757-28-4,
 5-Chloropyrrole-2-carboxaldehyde 1885-14-9, Phenyl chloroformate
 2012-29-5, 2,4-Diiiodophenol 2075-45-8, 4-Bromopyrazole 2258-42-6,
 Acetic formic anhydride 2365-48-2, Methyl thioglycolate 2374-03-0,
 4-Amino-3-hydroxybenzoic acid 2458-12-0, 3-Amino-4-methylbenzoic acid
 2627-86-3, ((S)-(-)- α -Methylbenzyl)amine 2999-46-4, Ethyl
 isocyanoacetate 3141-26-2, 3,4-Dibromothiophene 3469-69-0,
 4-Iodopyrazole 3770-50-1, Ethyl indole-2-carboxylate 4228-10-8,
 1-Indan-5-ylethanone 5176-27-2, 1-(tert-Butoxycarbonyl)-1H-pyrrole
 6367-37-9 6636-78-8, 2-Chloro-3-pyridinol 7342-82-7,
 3-Bromothianaphthene 7379-35-3, 4-Chloropyridine hydrochloride
 7693-46-1, 4-Nitrophenyl chloroformate 13139-17-8, N-
 [[(Benzyloxy)carbonyl]oxy]succinimide 13361-64-3,
 Propargyltrimethylsilane 14719-83-6, Methyl 4-chloro-3-nitrobenzoate
 15905-18-7, Methyl nicotinate 1-oxide 22037-28-1, 3-Bromofuran
 22288-78-4, Methyl 3-aminothiophene-2-carboxylate 24589-98-8, Methyl
 4-formyl-3-hydroxybenzoate 24589-99-9, Methyl 3-formyl-4-hydroxybenzoate
 26249-20-7, Butene oxide 33515-58-1, 4-Chloropyrrole-2-carboxaldehyde
 37746-78-4, Ethyl (E)-4-bromo-2-butenate 43077-77-6,
 4,5-Dihydroxypyridine-2-carboxylic acid 61040-21-9 79099-07-3,
 tert-Butyl 4-oxo-1-piperidinecarboxylate 82304-99-2, Ethyl
 3-formyl-4-hydroxybenzoate 90843-31-5, 1-(2,3-Dihydrobenzofuran-5-
 yl)ethanone 123536-14-1, (R)-(+)-3-Aminoquinuclidine dihydrochloride
 145100-51-2, 2-[N,N-Bis(trifluoromethylsulfonyl)amino]-5-chloropyridine
 187543-81-3 280752-79-6 473795-37-8, 1-Azabicyclo[3.2.1]octan-3-one
 hydrochloride 478148-95-7 527681-03-4 655785-37-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use
 in combination therapy for treatment of ADHD)

IT: 1074-76-6P, 2,4-Dimethyl-3-nitropyridine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)

(preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use
 in combination therapy for treatment of ADHD)

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TI Inhibition of inflammation using .alpha.7

nicotinic receptor-binding cholinergic agonists

IN Tracey, Kevin J.; Wang, Hong

PA North Shore-Long Island Jewish Research Institute, USA

SO PCT Int. Appl., 75 pp.

CODEN: PIXXD2

DT Patent

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 A61P029-00; A61P031-00; A61P033-00; A61P037-00; A61P043-00

CC 1-7 (Pharmacology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004052365	A2	20040624	WO 2003-US38708	20031205
	WO 2004052365	A3	20040923		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,			
		CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,			
		GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,			
		LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,			
		NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,			
		TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,			

BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004204355 A1 20041014 US 2003-729427 20031205

PRAI US 2002-431650P P 20021206

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004052365	ICM	A61K031-444
	ICS	A61K031-454; A61P001-00; A61P009-00; A61P011-00; A61P015-00; A61P029-00; A61P031-00; A61P033-00; A61P037-00; A61P043-00
US 2004204355	NCL	514/012.000
	ECLA	A61K031/00; A61K031/439; A61K031/444; A61K031/46

OS MARPAT 141:65099

AB Methods of inhibiting release of a proinflammatory cytokine from a macrophage are provided. The methods comprise treating the macrophage with a cholinergic agonist in an amount sufficient to decrease the amount of the proinflammatory cytokine that is released from the macrophage, wherein the cholinergic agonist is selective for an **.alpha.7 nicotinic** receptor. Methods for inhibiting an **inflammatory** cytokine cascade in a patient are also provided. The methods comprise treating the patient with a cholinergic agonist in an amount sufficient to inhibit the **inflammatory** cytokine cascade, wherein the cholinergic agonist is selective for an **α 7 nicotinic** receptor. Methods for determining whether a compound is a cholinergic agonist reactive with an **α 7 nicotinic** receptor are also provided. The methods comprise determining whether the compound inhibits release of a proinflammatory cytokine from a mammalian cell. Addnl., methods for determining whether a compound is a cholinergic antagonist reactive with an **α 7 nicotinic** receptor are provided. These methods comprise determining whether the compound reduces the ability of a cholinergic agonist to inhibit the release of a proinflammatory cytokine from a mammalian cell. Oligonucleotides or mimetics capable of inhibiting attenuation of lipopolysaccharide-induced **TNF** release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are also provided. The oligonucleotides or mimetics consist essentially of a sequence greater than 5 nucleotides long that is complementary to an mRNA of an **α7** receptor. Addnl., methods of inhibiting attenuation of **TNF** release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are provided. These methods comprise treating the macrophage with the above-described oligonucleotide or mimetic. Sepsis in mice was treated with 3-(2,4-dimethoxybenzylidene)anabaseine.

ST **inflammation inhibition alpha7 nicotinic** receptor cholinergic agonist; proinflammatory cytokine macrophage inhibition **alpha7 nicotinic** agonist; **inflammatory** cytokine cascade inhibition **alpha7 nicotinic** agonist; sepsis treatment dimethoxybenzylidene anabaseine

IT Kidney, disease
 (Goodpasture's syndrome, treatment of; **inflammation** inhibition with **α 7 nicotinic** receptor-binding cholinergic agonists)

IT High-mobility group proteins
 RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
 (HMG1, as proinflammatory cytokine inhibited from release from macrophage; **inflammation** inhibition with **α 7 nicotinic** receptor-binding cholinergic agonists)

IT Kidney, disease
 (IgA nephropathy, treatment of; **inflammation** inhibition with **α 7 nicotinic** receptor-binding cholinergic agonists)

IT Bone, disease
(Paget's, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Arthritis
(Reiter's syndrome, treatment of; **inflammation** inhibition
with α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Intestine, disease
(Whipple's, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Digestive tract, disease
(achalasia, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Respiratory distress syndrome
(adult, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Transplant rejection
(allotransplant, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Lung, disease
(alveolitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Ameba
(amebiasis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT **Inflammation**
Spinal column, disease
(ankylosing spondylitis, treatment of; **inflammation**
inhibition with α 7 **nicotinic**
receptor-binding cholinergic agonists)

IT Appendix, disease
Inflammation
(appendicitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Artery, disease
Inflammation
(arteritis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Disease, animal
Pain
(arthralgia, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Interleukin 18
Interleukin 1 β
Interleukin 6
Tumor necrosis factors
RL: ADV (Adverse effect, including toxicity); BSU (Biological study,
unclassified); BIOL (Biological study)
(as proinflammatory cytokine inhibited from release from macrophage;
inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT Bronchi, disease
Inflammation
(bronchiolitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding

cholinergic agonists)

IT Bronchi, disease
Inflammation
(bronchitis, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Mycosis
(candidiasis, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Ischemia
(cardiac, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Immune system
(cell of; inflammation inhibition with α
7 nicotinic receptor-binding cholinergic agonists)

IT Biliary tract, disease
Inflammation
(cholangitis, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Gallbladder, disease
Inflammation
(cholecystitis, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Lung, disease
(chronic obstructive, treatment of; inflammation inhibition
with α 7 nicotinic receptor-binding
cholinergic agonists)

IT Inflammation
Intestine, disease
(colitis, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Infection
(dengue, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Joint, anatomical
(disease, arthralgia, treatment of; inflammation inhibition
with α 7 nicotinic receptor-binding
cholinergic agonists)

IT Urethra
(disease, urethritis, treatment of; inflammation inhibition
with α 7 nicotinic receptor-binding
cholinergic agonists)

IT Immunity
(disorder, immune complex, treatment of; inflammation
inhibition with α 7 nicotinic
receptor-binding cholinergic agonists)

IT Bacteremia
(disseminated, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Ulcer
(duodenal, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Intestine, disease
(duodenum, ulcer, treatment of; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT Heart, disease

Inflammation
(endocarditis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Granuloma
(eosinophilic, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Epididymis
(epididymitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT **Inflammation**
(epiglottitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Heart, disease
(failure, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT **Inflammation**
(fascia, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Infection
(filariasis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT mRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for α 7 **nicotinic** receptor,
oligonucleotides complementary to; **inflammation** inhibition
with α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for α 7 **nicotinic** receptor;
inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT Ulcer
(gastric, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Transplant and Transplantation
(graft-vs.-host reaction, treatment of; **inflammation**
inhibition with α 7 **nicotinic**
receptor-binding cholinergic agonists)

IT Granulomatous disease
(granulomatosis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Cyst, pathological
(hydatid, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Brain, disease
(infarction, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Hepatitis B virus
Hepatitis C virus
Herpesviridae
Human herpesvirus
Human immunodeficiency virus
Respiratory syncytial virus

(infection with, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Allergy inhibitors
Anti-AIDS agents
Anti-**inflammation** agents
Antiarthritics
Antiasthmatics
Antimalarials
Antirheumatic agents
Drug screening
Human
Inflammation
Mammalia
(inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT Oligonucleotides
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity);
THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhibiting attenuation of lipopolysaccharide-induced **TNF**
release from macrophages exposed to cholinergic agonists;
inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT Macrophage
(inhibition of proinflammatory cytokines release from;
inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT Reperfusion
Spinal cord, disease
(injury, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Heart, disease
(ischemia, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Animal cell
(mammalian; **inflammation** inhibition with α
7 **nicotinic** receptor-binding cholinergic agonists)

IT Heart, disease
Inflammation
(myocarditis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Nerve, disease
Pain
(neuralgia, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT **Inflammation**
Nerve, disease
(neuritis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT **Inflammation**
Pancreas, disease
(pancreatitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Ulcer
(peptic, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
cholinergic agonists)

IT Artery, disease
Inflammation

(periarteritis nodosa, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Pericardium
(pericarditis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Peritoneum, disease
(peritonitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Pharynx, disease
(pharyngitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Pleura, disease
(pleurisy, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Lung, disease
(pneumonitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Lung, disease
(pneumoultramicroscopic silicovolcanoconiosis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Cytokines
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(proinflammatory, inhibition of cascade of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Cytokines
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(proinflammatory, inhibition of release of, from macrophages; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Prostate gland, disease
(prostatitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(pulmonary alveolitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(pulmonary, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Injury
(reperfusion, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Nose, disease
(rhinitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Lipopolysaccharides
 RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (screening for agents inhibiting induction in mammalian cell of proinflammatory cytokine cascade by; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Abortion
 Shock (circulatory collapse)
 (septic, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
 Respiratory tract, disease
 (sinusitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Injury
 (spinal cord, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Brain, disease
 (stroke, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Arthritis
 Synovial membrane, disease
 (synovitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Lupus erythematosus
 (systemic, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
 Thyroid gland, disease
 (thyroiditis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Antisense oligonucleotides
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (to α 7 **nicotinic** receptor; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Allergy
 Anaphylaxis
 Arthritis
 Asthma
 Atherosclerosis
 Behcet's syndrome
 Burn
 Cachexia
 Celiac disease
 Cystic fibrosis
 Emphysema
 Encephalitis
 Fever and Hyperthermia
 Gout
 Hay fever
 Hepatitis
 Hodgkin's disease
 Influenza
 Ischemia
 Malaria
 Meningitis

Myasthenia gravis
 Necrosis
 Osteomyelitis
 Paralysis
 Periodontium, disease
 Rheumatic fever
 Rheumatoid arthritis
 Sarcoidosis
 Sepsis
 Septicemia
 (treatment of; **inflammation** inhibition with α
 7 **nicotinic** receptor-binding cholinergic agonists)
 IT Digestive tract, disease
 (ulcer, peptic, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT Stomach, disease
 (ulcer, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT **Inflammation**
 (urethritis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT Eye, disease
 Inflammation
 (uveitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT **Inflammation**
 Vagina, disease
 (vaginitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT Nerve
 (vagus, **nicotinic** receptor α 7 in
 inhibition of **TNF** release in response to stimulation of;
 inflammation inhibition with α 7
 nicotinic receptor-binding cholinergic agonists)
 IT Blood vessel, disease
 Inflammation
 (vasculitis, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT Thrombosis
 (venous, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT Infection
 (viral, treatment of; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT **Nicotinic** agonists
 Nicotinic antagonists
 (α 7; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT **Nicotinic** receptors
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (α 7; **inflammation** inhibition with
 α 7 **nicotinic** receptor-binding
 cholinergic agonists)
 IT 50-36-2D, Cocaine, quaternary analogs 5937-29-1, Cocaine methiodide
 154291-01-7D, isomers 156743-65-6 156743-78-1 156743-79-2
 156743-85-0 178419-47-1 220099-94-5 248270-35-1D, isomers

248270-40-8 248270-41-9 373358-00-0 400855-55-2 400855-58-5
400855-62-1 708210-26-8D, isomers 708210-27-9
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity);
THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(as cholinergic agonist of α 7
nicotinic receptor; inflammation inhibition with
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT 54-11-5, Nicotine

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT 708306-01-8

RL: BSU (Biological study, unclassified); PAC (Pharmacological activity);
THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence, inhibiting attenuation of LPS-induced TNF
release from macrophage exposed to cholinergic agonist;
inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

IT 709881-00-5 709881-01-6 709881-02-7 709881-03-8 709881-04-9
709881-05-0 709881-06-1 709881-07-2 709881-08-3 709881-09-4
709881-10-7 709881-11-8 709881-12-9 709881-13-0 709881-14-1
709881-15-2 709881-16-3 709881-17-4 709881-18-5 709881-19-6

RL: PRP (Properties)
(unclaimed sequence; inhibition of inflammation using
 α 7 nicotinic receptor-binding
cholinergic agonists)

IT 11032-79-4, α -Bungarotoxin 37209-28-2, Bungarotoxin

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7 nicotinic receptor antagonist;
inflammation inhibition with α 7
nicotinic receptor-binding cholinergic agonists)

L8 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:356732 CAPLUS

DN 141:1722

ED Entered STN: 03 May 2004

TI Cholinergic modulation of microglial activation by α
7 nicotinic receptors

AU Shytle, R. Douglas; Mori, Takashi; Townsend, Kirk; Vendrame, Martina; Sun,
Nan; Zeng, Jin; Ehrhart, Jared; Silver, Archie A.; Sanberg, Paul R.; Tan,
Jun

CS Child Development Center, Neuroimmunology Laboratory, Department of
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SO Journal of Neurochemistry (2004), 89(2), 337-343
CODEN: JONRA9; ISSN: 0022-3042

FB Blackwell Publishing Ltd.

DT Journal

LA English

CC 2-8 (Mammalian Hormones)

Section cross-reference(s): 14

AB Almost all degenerative diseases of the CNS are associated with chronic
inflammation. A central step in this process is the activation of
brain mononuclear phagocyte cells, called microglia. While it is
recognized that healthy neurons and astrocytes regulate the magnitude of
microglia-mediated innate immune responses and limit excessive CNS
inflammation, the endogenous signals governing this process are
not fully understood. In the peripheral nervous system, recent studies
suggest that an endogenous "cholinergic anti-inflammatory
pathway" regulates systemic inflammatory responses via
 α 7 nicotinic acetylcholinergic receptors
(nAChR) found on blood-borne macrophages. These data led the authors to
investigate whether a similar cholinergic pathway exists in the brain that
could regulate microglial activation. Here the authors report for the

first time that cultured microglial cells express $\alpha 7$ nAChR subunit as determined by RT-PCR, western blot, immunofluorescent, and immunohistochem. analyses. Acetylcholine and nicotine pre-treatment inhibit lipopolysaccharide (LPS)-induced **TNF- α** release in murine-derived microglial cells, an effect attenuated by $\alpha 7$ selective **nicotinic** antagonist, α -bungarotoxin.

Furthermore, this inhibition appears to be mediated by a reduction in phosphorylation of p44/42 and p38 mitogen-activated protein kinase (MAPK). Though preliminary, the authors' findings suggest the existence of a brain cholinergic pathway that regulates microglial activation through .

alpha.7 nicotinic receptors. Neg. regulation of microglia activation may also represent addnl. mechanism underlying nicotine's reported neuroprotective properties.

ST nicotinic receptor ERK p38 signaling microglia cholinergic system brain

IT Signal transduction, biological

(cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Tumor necrosis factors

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Nervous system

(cholinergic; cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Nervous system, disease

(degeneration; cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to possible role in neurodegenerative diseases)

IT Neuroglia

(microglia; cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Phosphorylation, biological

(protein; cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT **Nicotinic** receptors

RL: BSU (Biological study, unclassified); BIOL (Biological study)

($\alpha 7$; cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT 51-84-3, Acetylcholine, biological studies 54-11-5, Nicotine

137632-07-6, ERK1 kinase 137632-08-7, ERK2 kinase 165245-96-5, p38

Mitogen activated protein kinase

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(cholinergic modulation of murine microglial activation by $\alpha 7$ **nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Albright, A; J Neurovirol 2001, V7, P196 CAPLUS
- (2) Belluardo, N; Behav Brain Res 2000, V113, P21 CAPLUS
- (3) Brenner, D; Neurology 1993, V43, P293 MEDLINE
- (4) Burghaus, L; Brain Res Mol Brain Res 2000, V76, P385 CAPLUS
- (5) Cormier, A; Neuropharmacology 2003, V44, P642 CAPLUS
- (6) Dajas-Bailador, F; J Neurochem 2002, V81, P606 CAPLUS
- (7) Engidawork, E; J Neural Transm Suppl 2001, P211 CAPLUS
- (8) Fiebich, B; J Neuroimmunol 2002, V132, P18 CAPLUS
- (9) Ghosheh, O; Drug Metab Disposition 2001, V29, P645 CAPLUS
- (10) Guan, Z; Brain Res 2002, V956, P358 CAPLUS
- (11) Guan, Z; Neurochem Int 2003, V43, P243 CAPLUS

- (12) Hilmas, C; J Neurosci 2001, V21, P7463 CAPLUS
- (13) Jeohn, G; Neuroscience 2002, V114, P689 CAPLUS
- (14) Kimura, R; Life Sci 2003, V72, P2155 CAPLUS
- (15) Kuo, Y; J Neuroimmunol 2002, V130, P140 CAPLUS
- (16) Leonard, S; Eur J Pharmacol 2000, V393, P237 CAPLUS
- (17) Liu, B; J Pharmacol Exp Ther 2003, V304, P1 CAPLUS
- (18) Morens, D; Neurology 1995, V45, P1041 MEDLINE
- (19) Newhouse, P; Drugs Aging 1997, V11, P206 MEDLINE
- (20) Newnan, M; Life Sci 2002, V71, P2807 CAPLUS
- (21) Nordberg, A; J Neurosci Res 1992, V31, P103 CAPLUS
- (22) O'Neill, M; Curr Drug Target CNS Neurol Disord 2002, V1, P399 CAPLUS
- (23) Perry, D; J Pharmacol Exp Ther 1999, V289, P1545 CAPLUS
- (24) Polazzi, E; Rev Neurosci 2002, V13, P221
- (25) Shytte, R; Nicotine in Psychiatry: Psychopathology and Emerging Therapeutics 2000, P183
- (26) Streit, W; J Mol Med 1997, V75, P130 CAPLUS
- (27) Streit, W; Toxicol Pathol 2000, V28, P28 MEDLINE
- (28) Tan, J; Curr Opin Pharmacol 2002, V2, P445 CAPLUS
- (29) Tan, J; J Biol Chem 2000, V275, P37224 CAPLUS
- (30) Tan, J; J Immunol 1999, V163, P6614 CAPLUS
- (31) Tan, J; J Neurosci 2000, V20, P7587 CAPLUS
- (32) Tan, J; Science 1999, V286, P2352 CAPLUS
- (33) Terry, A; J Pharmacol Exp Ther 2003, V306, P821 CAPLUS
- (34) Wang, H; Nature 2003, V421, P384 CAPLUS
- (35) Wenk, G; Eur J Pharmacol 2000, V402, P77 CAPLUS
- (36) Wessler, I; Naunyn Schmiedeberg's Arch Pharmacol 1997, V356, P694 CAPLUS

L8 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:967213 CAPLUS

DN 140:157323

ED Entered STN: 11 Dec 2003

TI Nicotine-induced neuroprotection against N-methyl-D-aspartic acid or β -amyloid peptide occur through independent mechanisms distinguished by pro-inflammatory cytokines

AU Gahring, Lorise C.; Meyer, Erin L.; Rogers, Scott W.

CS Education and Clinical Center, Salt Lake City VA-Geriatric Research, Salt Lake City, UT, USA

SO Journal of Neurochemistry (2003), 87(5), 1125-1136

CODEN: JONRA9; ISSN: 0022-3042

PB Blackwell Publishing Ltd.

DT Journal

LA English

CC 1-11 (Pharmacology)

Section cross-reference(s): 4

AB Nicotine, the causative agent of addiction to tobacco, can also be a neuroprotectant. Nicotine-induced neuroprotection against different toxins is imparted through pharmacol. distinct neuronal **nicotinic** acetylcholine receptors (nAChR) where protection against chronic N-methyl-D-aspartic acid (NMDA) exposure is through nAChR α 7 but protection against the toxic peptide of amyloid precursor protein, A β 25-35, is through nAChR α 4 β 2. The **inflammatory** cytokine **tumor necrosis factor** alpha (TNF.alpha.) is also neuroprotective, however, in the presence of nicotine, neuroprotection against NMDA is abolished. The specificity of nicotine-TNF.alpha. antagonism was further refined using a mouse transgenic dominant neg. of nAChR α 7 in which nicotine failed to induce neuroprotection against NMDA and antagonism of TNF.alpha. was absent. However, nicotine-mediated neuroprotection against A β 25-35 was unaffected and, therefore, did not require the expression of functional nAChR α 7s. The mechanism of TNF.alpha.-mediated neuroprotection and antagonism by nicotine was independent of caspase 8 activation or nuclear factor kappa B translocation in neurons but C6-ceramide addition to neuronal cultures subsequently exposed to NMDA mimicked the neuroprotective effect of TNF.alpha. and, like TNF.alpha., it was antagonized

by cotreatment with nicotine. Therefore, the neuroprotective effects of nicotine against differing toxic assaults requires distinct nAChR subtypes and proceeds through intracellular pathways that overlap with similarly different mechanisms initiated by pro-inflammatory cytokines. These results provide insight into how nicotine imparts neuroprotection and modulates inflammatory responses.

- ST nicotine neuroprotection NMDA beta amyloid peptide neurotoxicity;
nicotinic receptor TNFalpha nicotine neuroprotection
- IT Amyloid precursor proteins
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(Aβ25-35; nicotine-induced neuroprotection against NMDA or
β-amyloid peptide occur through independent mechanisms
distinguished by pro-inflammatory cytokines)
- IT Cytoprotective agents
(neuroprotective; nicotine-induced neuroprotection against NMDA or
β-amyloid peptide occur through independent mechanisms
distinguished by pro-inflammatory cytokines)
- IT Human
Nerve
(nicotine-induced neuroprotection against NMDA or β-amyloid
peptide occur through independent mechanisms distinguished by pro-
inflammatory cytokines)
- IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nicotine-induced neuroprotection against NMDA or β-amyloid
peptide occur through independent mechanisms distinguished by pro-
inflammatory cytokines)
- IT Cytokines
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(proinflammatory; nicotine-induced neuroprotection against NMDA or
β-amyloid peptide occur through independent mechanisms
distinguished by pro-inflammatory cytokines)
- IT Nicotinic receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(subunits; nicotine-induced neuroprotection against NMDA or
β-amyloid peptide occur through independent mechanisms
distinguished by pro-inflammatory cytokines)
- IT Nerve
(toxicity; nicotine-induced neuroprotection against NMDA or
β-amyloid peptide occur through independent mechanisms
distinguished by pro-inflammatory cytokines)
- IT 6384-92-5, N-Methyl-D-aspartic acid
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(nicotine-induced neuroprotection against NMDA or β-amyloid
peptide occur through independent mechanisms distinguished by pro-
inflammatory cytokines)
- IT 54-11-5, Nicotine
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU
(Therapeutic use); BIOL (Biological study); USES (Uses)
(nicotine-induced neuroprotection against NMDA or β-amyloid
peptide occur through independent mechanisms distinguished by pro-
inflammatory cytokines)

RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Albuquerque, E; Behav Brain Res 2000, V113, P131 CAPLUS
- (2) Anisman, H; CMAJ 1996, V155, P1075 MEDLINE
- (3) Anisman, H; CMAJ 1996, V155, P867 MEDLINE
- (4) Arredondo, J; J Cell Biol 2002, V159, P325 CAPLUS
- (5) Arredondo, J; Lab Invest 2001, V81, P1653 CAPLUS
- (6) Arredondo, J; Lab Invest 2003, V83, P207 CAPLUS
- (7) Barger, S; Proc Natl Acad Sci USA 1995, V92, P9328 CAPLUS
- (8) Bauer, J; Glia 2001, V36, P235 MEDLINE
- (9) Bernik, T; J Exp Med 2002, V195, P781 CAPLUS
- (10) Botchkina, G; Mol Med 1997, V3, P765 CAPLUS
- (11) Britto, L; Vis Neurosci 1994, V11, P569 MEDLINE

- (12) Broide, R; Mol Neurobiol 1999, V20, P1 CAPLUS
- (13) Buisson, B; J Neurosci 2001, V21, P1819 CAPLUS
- (14) Buisson, B; Trends Pharmacol Sci 2002, V23, P130 CAPLUS
- (15) Carlson, N; J Biol Chem 1997, V272, P11295 CAPLUS
- (16) Carlson, N; J Immunol 1999, V163, P3963 CAPLUS
- (17) Carlson, N; J Neurobiol 1998, V35, P29 CAPLUS
- (18) Cauley, K; J Neurobiol 1996, V30, P303 CAPLUS
- (19) Cheng, B; Neuron 1994, V12, P139 CAPLUS
- (20) Conroy, W; Mol Pharmacol 1998, V53, P392 CAPLUS
- (21) Corringier, P; J Neurosci 1998, V18, P648 CAPLUS
- (22) Corringier, P; Neuron 1999, V22, P831 CAPLUS
- (23) Darnay, B; J Leukoc Biol 1997, V61, P559 CAPLUS
- (24) Diaz-Villoslada, P; Curr Opin Neurol 1998, V11, P235 MEDLINE
- (25) Digicaylioglu, M; Nature 2001, V412, P641 CAPLUS
- (26) Drisdell, R; J Neurosci 2000, V20, P133 CAPLUS
- (27) Flores, C; J Neurosci 1996, V16, P7892 CAPLUS
- (28) Flores, C; Mol Pharmacol 1992, V41, P31 CAPLUS
- (29) Francis, M; Mol Pharmacol 2000, V58, P109 CAPLUS
- (30) Gahring, L; Alcohol Clin Exp Res 1999, V23, P1571 CAPLUS
- (31) Gahring, L; Neuroimmunomodulation 1996, V3, P289 CAPLUS
- (32) Giacobini, E; Biology of Nicotine 1992, P183
- (33) Girod, R; Ann NY Acad Sci 1999, V868, P578 CAPLUS
- (34) Goodman, Y; J Neurochem 1996, V66, P869 CAPLUS
- (35) Kellar, K; Brain Res 1987, V436, P62 CAPLUS
- (36) Kihara, T; Ann Neurol 1997, V42, P159 CAPLUS
- (37) Kihara, T; Brain Res 1998, V792, P331 CAPLUS
- (38) Kihara, T; J Biol Chem 2001, V276, P13541 CAPLUS
- (39) Le Novere, N; Proc Natl Acad Sci USA 2002, V99, P3210 CAPLUS
- (40) Lentz, T; Biochem Biophys Res Commun 2000, V268, P480 CAPLUS
- (41) Levin, E; J Neurobiol 2002, V53, P633 CAPLUS
- (42) Lindstrom, J; Ion Channels 1996, V4, P377 CAPLUS
- (43) Lindstrom, J; Mol Neurobiol 1997, V15, P193 CAPLUS
- (44) Mansvelder, H; J Neurobiol 2002, V53, P606 CAPLUS
- (45) Marks, M; J Pharmacol Exp Ther 1991, V259, P392 CAPLUS
- (46) Mattson, M; J Neurosci Res 1997, V49, P681 CAPLUS
- (47) McGeer, P; Neurobiol Aging 2001, V22, P799 CAPLUS
- (48) Meda, L; Neurobiol Aging 2001, V22, P885 CAPLUS
- (49) Meyer, E; J Biol Chem 2002, V277, P10869 CAPLUS
- (50) Mirzorian, A; J Pharmacol Exp Ther 2002, V302, P560 CAPLUS
- (51) Newhouse, P; Drugs Aging 1997, V11, P206 MEDLINE
- (52) Pereira, E; J Neurobiol 2002, V53, P479 CAPLUS
- (53) Quik, M; Neurotoxicology 2002, V23, P581 CAPLUS
- (54) Richardson, C; Qjm 2003, V96, P57 MEDLINE
- (55) Rogers, S; Glia 2001, V33, P306 MEDLINE
- (56) Rogers, S; J Neurosci 1992, V12, P4611 CAPLUS
- (57) Rogers, S; J Neurosci 1998, V18, P4825 CAPLUS
- (58) Ruvolo, P; Leukemia 2001, V15, P1153 CAPLUS
- (59) Sabbagh, M; J Alzheimers Dis 2002, V4, P317 CAPLUS
- (60) Sugano, N; Biochem Biophys Res Commun 1998, V252, P25 CAPLUS
- (61) Wajant, H; Cell Death Differ 2003, V10, P45 CAPLUS
- (62) Wang, H; Nature 2003, V421, P384 CAPLUS
- (63) Wang, N; J Physiol 2002, V542, P347 CAPLUS
- (64) Wang, Y; Mol Pharmacol 2001, V60, P1201 CAPLUS
- (65) Whitehouse, P; Neurology 1997, V48, P52 CAPLUS
- (66) Zia, S; Res Commun Mol Pathol Pharmacol 1997, V97, P243 CAPLUS
- (67) Zwart, R; Ann NY Acad Sci 1999, V868, P636 CAPLUS

L8 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:881970 CAPLUS

DN 140:107185

ED Entered STN: 11 Nov 2003

TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda

AU Chimienti, Fabrice; Hogg, Ronald C.; Plantard, Laure; Lehmann, Caroline; Brakch, Nouredine; Fischer, Judith; Huber, Marcel; Bertrand, Daniel;

Hohl, Daniel

CS Dermatology Unit, CHUV, Laboratory for Cutaneous Biology, Lausanne, Switz.

SO Human Molecular Genetics (2003), 12(22), 3017-3024
CODEN: HMGEE5; ISSN: 0964-6906

PB Oxford University Press

DT Journal

LA English

CC 6-3 (General Biochemistry)

Section cross-reference(s): 3, 14

AB Mal de Meleda is an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder due to mutations in the ARS B gene, encoding for SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1). SLURP-1 belongs to the Ly-6/uPAR superfamily of receptor and secreted proteins, which participate in signal transduction, immune cell activation or cellular adhesion. The high degree of structural similarity between SLURP-1 and the three fingers motif of snake neurotoxins and Lynx1 suggests that this protein interacts with the neuronal acetylcholine receptors. We found that SLURP-1 potentiates the human α 7 nicotinic acetylcholine receptors that are present in keratinocytes. These results identify SLURP-1 as a secreted epidermal neuromodulator which is likely to be essential for both epidermal homeostasis and inhibition of **TNF**-alpha release by macrophages during wound healing. This explains both the hyperproliferative as well as the **inflammatory** clin. phenotype of Mal de Meleda.

ST human protein SLURP 1 neuromodulator secreted protein skin disorder; Mal de Meleda palmoplantar keratosis human SLURP1

IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(ARS B; characterization of the role of SLURP-1 in Mal de Meleda, an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder arising due to mutations in the ARS B gene)

IT Wound healing
(SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of **TNF**-alpha release by macrophages during wound healing)

IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of **TNF**-alpha release by macrophages during wound healing)

IT Human
Skin, disease
(characterization of the role of SLURP-1 in Mal de Meleda, an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder arising due to mutations in the ARS B gene)

IT Skin
(epidermis; SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of **TNF**-alpha release by macrophages during wound healing)

IT Keratosis
(hyper-, palmoplantar; characterization of the role of SLURP-1 in Mal de Meleda, an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder arising due to mutations in the ARS B gene)

IT Phenotypes
(identification of SLURP-1 as an epidermal neuromodulator explains the clin. phenotype of Mal de Meleda)

IT Neurohormones
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(neuromodulators; identification of SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1) as an epidermal neuromodulator of the α 7 nicotinic acetylcholine receptor)

IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(secretory; SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of

TNF- α release by macrophages during wound healing)

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Adermann, K; Protein Sci 1999, V8, P810 CAPLUS
- (2) Apostolopoulos, J; Immunity 2000, V12, P223 CAPLUS
- (3) Arredondo, J; J Cell Biol 2002, V21, P21
- (4) Bertrand, D; Methods in Neuroscience 1991, V4, P174
- (5) Blasi, F; Nat Rev Mol Cell Biol 2002, V3, P932 CAPLUS
- (6) Borovikova, L; Nature 2000, V405, P458 CAPLUS
- (7) Brakenhoff, R; J Cell Biol 1995, V129, P1677 CAPLUS
- (8) Casey, J; Blood 1994, V84, P1151 CAPLUS
- (9) Changeux, J; Curr Opin Neurobiol 2001, V11, P369 CAPLUS
- (10) Eckl, K; Hum Genet 2003, V112, P50
- (11) Elias, P; J Invest Dermatol 2002, V119, P1128 CAPLUS
- (12) Fischer, J; Eur J Hum Genet 1998, V6, P542 CAPLUS
- (13) Fischer, J; Hum Mol Genet 2001, V10, P875 CAPLUS
- (14) Franceschetti, A; J Genet Hum 1972, V20, P267 MEDLINE
- (15) Grando, S; Curr Opin Dermatol 1997, V4, P262
- (16) Grando, S; J Invest Dermatol 1995, V105, P774 CAPLUS
- (17) Grando, S; J Invest Dermatol Symp Proc 1997, V2, P41 CAPLUS
- (18) Horie, M; Genomics 1998, V53, P365 CAPLUS
- (19) Jacobi, J; Am J Pathol 2002, V161, P97 CAPLUS
- (20) Jordan, M; Nucl Acids Res 1996, V24, P596 CAPLUS
- (21) Kelley, L; J Mol Biol 2000, V299, P499 CAPLUS
- (22) Kock, A; J Exp Med 1990, V172, P1609 MEDLINE
- (23) Kondo, S; Eur J Immunol 1997, V27, P1713 CAPLUS
- (24) Menon, G; J Invest Dermatol 1985, V84, P508 CAPLUS
- (25) Miwa, J; Neuron 1999, V23, P105 CAPLUS
- (26) Montuori, N; J Biol Chem 2002, V277, P46932 CAPLUS
- (27) Nakayama, T; Int Immunol 2001, V13, P95 CAPLUS
- (28) Neumann, I; Arch Derm Syph 1898, V42, P163
- (29) Palfree, R; Immunol Today 1991, V12, P170 CAPLUS
- (30) Ploug, M; FEBS Lett 1994, V349, P163 CAPLUS
- (31) Ploug, M; J Biol Chem 1993, V268, P17539 CAPLUS
- (32) Reiter, R; Proc Natl Acad Sci USA 1998, V95, P1735 CAPLUS
- (33) Saitou, N; Mol Biol Evol 1987, V4, P406 MEDLINE
- (34) Schrijvers, A; Exp Cell Res 1991, V196, P264 CAPLUS
- (35) Shan, X; J Immunol 1998, V160, P197 CAPLUS
- (36) Tone, M; J Mol Biol 1992, V227, P971 CAPLUS
- (37) Tsetlin, V; Eur J Biochem 1999, V264, P281 CAPLUS
- (38) Tsuji, H; Genomics 2003, V81, P26 CAPLUS
- (39) Wang, H; Nature 2003, V421, P384 CAPLUS
- (40) Ward, K; J Invest Dermatol 2003, V120, P96 CAPLUS
- (41) Zia, S; J Pharmacol Exp Ther 2000, V293, P973 CAPLUS

L8 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:164666 CAPLUS

DN 139:17796

ED Entered STN: 05 Mar 2003

TI A β -induced **TNF- α** expression and acetylcholine action
in mouse glial cells

AU Nomura, Jun; Hosoi, Toru; Okuma, Yasunobu; Nomura, Yasuyuki

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SO Life Sciences (2003), 72(18-19), 2117-2120

CODEN: LIFSAK; ISSN: 0024-3205

PB Elsevier Science Inc.

DT Journal

LA English

CC 2-8 (Mammalian Hormones)

Section cross-reference(s): 14, 15

AB The brains in patients with Alzheimer's disease show chronic
inflammatory responses characterized by activated glial cells and
increased expression of cytokines. It is of interest to determine whether
acetylcholine (ACh) affects A β -induced cytokine expression in the

glial cells. Since it has been shown that .alpha.7 subunits of nicotinic ACh receptors are expressed in glial cells and that Aβ1-42 binds to .alpha.7, the authors examined the effects of cholinergic agonists, carbachol, nicotine and oxotremorine-M, on Aβ-induced TNF-α expression in mouse glial cells. The authors did not observe any regulatory effects of ACh on Aβ-induced TNF-α transcription in the glial cells. The authors discuss the pathophysiol. roles of ACh in glial cells in the brains of patients with Alzheimer's disease.

- ST beta amyloid TNF expression acetylcholine neuroglia; Alzheimer
IT disease acetylcholine neuroglia cytokine
IT Alzheimer's disease
Neuroglia
Transcriptional regulation
(Aβ-induced TNF-α expression and acetylcholine
action in mouse glial cells in relation to Alzheimer's disease)
IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Aβ-induced TNF-α expression and acetylcholine
action in mouse glial cells in relation to Alzheimer's disease)
IT Nicotinic receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7; Aβ-induced TNF-α
expression and acetylcholine action in mouse glial cells in relation to
Alzheimer's disease)
IT 107761-42-2, β-Amyloid 1-42
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(Aβ-induced TNF-α expression and acetylcholine
action in mouse glial cells in relation to Alzheimer's disease)
IT 51-84-3, Acetylcholine, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Aβ-induced TNF-α expression and acetylcholine
action in mouse glial cells in relation to Alzheimer's disease)
IT 51-83-2, Carbachol 54-11-5, Nicotine 63939-65-1, Oxotremorine-M
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cholinergic agonist; Aβ-induced TNF-α expression
and acetylcholine action in mouse glial cells in relation to
Alzheimer's disease)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Akama, K; Journal of Biological Chemistry 2000, V275(11), P7918 CAPLUS
- (2) Borovikova, L; Nature 2000, V405(6785), P458 CAPLUS
- (3) Hosli, E; Experimental Brain Research 1988, V71(2), P450 MEDLINE
- (4) Hosoi, T; American Journal of Physiology 2000, V279(1), PR141 CAPLUS
- (5) Hosoi, T; Biochemical and Biophysical Research Communications 2000, V273(1), P312 CAPLUS
- (6) Nishiya, T; Biochemical and Biophysical Research Communications 2000, V275(2), P268 CAPLUS
- (7) Nomura, Y; Neuroscience Research 1993, V18(2), P103 CAPLUS
- (8) Sharma, G; Proceedings of the National Academy of Sciences of the United States of America 2001, V98(7), P4148 CAPLUS
- (9) van Duijn, C; British Medical Journal 1991, V302(6791), P1491 MEDLINE
- (10) Wang, H; Journal of Biological Chemistry 2000, V275, P5626 CAPLUS
- (11) Wessler, I; Naunyn-Schmiedeberg's Archives of Pharmacology 1997, V356, P694 CAPLUS

L8 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:164662 CAPLUS

DN 139:17793

ED Entered STN: 05 Mar 2003

TI Nicotinic acetylcholine receptor subunits and receptor activity in the
epithelial cell line HT29

AU Summers, Andrea E.; Whelan, Clifford J.; Parsons, Mike E.

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SO Life Sciences (2003); 72(18-19), 2091-2094

CODEN: LIFSAK; ISSN: 0024-3205

PB Elsevier Science Inc.

DT Journal

LA English

CC 2-8 (Mammalian Hormones)

Section cross-reference(s): 14, 15

AB In the present study the authors have used RT-PCR to investigate nicotinic acetylcholine receptor (nAChR) subunit expression, and studied the effect of nicotine on **TNF.alpha.**-induced cytokine (IL-8) release in the epithelial cell line HT29. RNA was extracted using a com. kit and amplified by RT-PCR. RT-PCR products were separated by electrophoresis and visualized using ethidium bromide. IL-8 release was measured by ELISA from cells activated for 6 h with **TNF.alpha.** (50 ng ml⁻¹) in the absence and presence of nicotine (10⁻¹¹-10⁻⁶ M). HT29 cells contained mRNA for $\beta 1$, $\alpha 4$, $\alpha 5$, and $\alpha 7$ nAChR subunits. Activation of HT29 cells increased IL-8 release from undetectable amts. to 3.92 ng ml⁻¹. Nicotine significantly inhibited **TNF.alpha.**-induced IL-8 release in a concentration related manner with peak inhibition occurring at 10⁻⁷ M

(2.39

ng ml⁻¹). The authors' data suggests that, while HT29 cells express mRNA for nAChR subunits, the only nAChR subunits that could form functional receptors and inhibit IL-8 release are $\alpha 7$.

ST nicotinic acetylcholine receptor colon epithelium; nicotine **TNF** IL8 release colon epithelium; ulcerative colitis nicotine IL8 release colon epithelium

IT Intestine

(colon, epithelium; nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF.alpha.**-induced IL-8 release in colonic epithelial cell line HT29)

IT Epithelium

(colonic; nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF.alpha.**-induced IL-8 release in colonic epithelial cell line HT29)

IT Interleukin 8

Tumor necrosis factors

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF.alpha.**-induced IL-8 release in colonic epithelial cell line HT29)

IT Inflammation

Intestine, disease

(ulcerative colitis; nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF.alpha.**-induced IL-8 release in colonic epithelial cell line HT29 in relation to ulcerative colitis)

IT Nicotinic receptors

RL: BSU (Biological study, unclassified); BIOL (Biological study)

($\alpha 4$, $\alpha 5$, $\alpha 7$ and $\beta 1$ subunits;

nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF.alpha.**-induced IL-8 release in colonic epithelial cell line HT29)

IT 54-11-5, Nicotine

RL: PAC (Pharmacological activity); BIOL (Biological study)

(nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF.alpha.**-induced IL-8 release in colonic epithelial cell line HT29)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Bhatti, M; Gut 1997, V40, PF294

(2) Daig, R; Gut 1996, V38, P216 MEDLINE

(3) Gregory, R; Clinical and Diagnostic Laboratory Immunology 1996, V3, P578 CAPLUS

(4) Ihenetu, K; European Journal of Pharmacology 2003, V458, P207 CAPLUS

(5) Louvet, B; Inflammatory Bowel Diseases 1999, V5, P174 MEDLINE

(6) Sandborn, W; American Journal of Gastroenterology 1999, V94, P1161 CAPLUS

L8 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:54246 CAPLUS

DN 138:186295

ED Entered STN: 23 Jan 2003

TI **Nicotinic acetylcholine receptor .alpha.7**

subunit is an essential regulator of **inflammation**

AU Wang, Hong; Yu, Man; Ochani, Mahendar; Amella, Carol Ann; Tanovic, Mahira; Susarla, Seenu; Li, Jian Hua; Wang, Haichao; Yang, Huan; Ulloa, Luis; Al-Abed, Yousef; Czura, Christopher J.; Tracey, Kevin J.

CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, Manhasset, NY, 11030, USA

SO Nature (London, United Kingdom) (2003), 421(6921), 384-388

CODEN: NATUAS; ISSN: 0028-0836

PB Nature Publishing Group

DT Journal

LA English

CC 15-10 (Immunochemistry)

AB Excessive **inflammation** and **tumor-necrosis**

factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxemia, sepsis, rheumatoid arthritis and **inflammatory** bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive **inflammation**. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage **TNF**, and attenuate systemic **inflammatory**

responses. This physiol. mechanism, termed the cholinergic anti-**inflammatory** pathway' has major implications in immunol. and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here the authors report that the **nicotinic acetylcholine receptor .alpha.7**

subunit is required for acetylcholine inhibition of macrophage **TNF** release. Elec. stimulation of the vagus nerve inhibits **TNF** synthesis in wild-type mice, but fails to inhibit **TNF** synthesis in $\alpha 7$ -deficient mice. Thus, the **nicotinic acetylcholine receptor .alpha.7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-**inflammatory** pathway.

ST **nicotinic acetylcholine receptor vagus nerve sepsis**

IT Endotoxemia

Human

Macrophage

(**nicotinic acetylcholine receptor $\alpha 7$**

subunit is an essential regulator of **inflammation**)

IT Tumor necrosis factors

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(**nicotinic acetylcholine receptor $\alpha 7$**

subunit is an essential regulator of **inflammation**)

IT Nerve

(vagus; **nicotinic acetylcholine receptor α**

7 subunit is an essential regulator of **inflammation**)

IT **Nicotinic receptors**

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(**$\alpha 7$; nicotinic acetylcholine**

receptor $\alpha 7$ subunit is an essential regulator of inflammation)

IT 51-84-3, Acetylcholine, biological studies 54-11-5, Nicotine

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(**nicotinic acetylcholine receptor $\alpha 7$**

subunit is an essential regulator of **inflammation**)

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Andersson, U; J Exp Med 2000, V192, P565 CAPLUS

(2) Bernik, T; J Exp Med 2002, V195, P781 CAPLUS

- (3) Bianchi, M; Mol Med 1995, V1, P254 CAPLUS
- (4) Borovikova, L; Nature 2000, V405, P458 CAPLUS
- (5) Cohen, P; Mol Med 1997, V3, P339 CAPLUS
- (6) Drisdell, R; J Neurosci 2000, V20, P133 CAPLUS
- (7) Feng, G; J Neurosci 1998, V18, P4166 CAPLUS
- (8) Franceschini, D; Behav Brain Res 2000, V113, P3 CAPLUS
- (9) Gault, J; Genomics 1998, V52, P173 CAPLUS
- (10) Kumins, N; Shock 1996, V5, P385 MEDLINE
- (11) Le Novere, N; J Mol Evol 1995, V40, P155 CAPLUS
- (12) Leonard, S; Nicotine Tob Res 2001, V3, P203 CAPLUS
- (13) Lin, W; Nature 2001, V410, P1057 CAPLUS
- (14) Lindstrom, J; Hand Book of Receptors and Channels: Ligand- and Voltage-Gated Ion Channels 1995, P153 CAPLUS
- (15) Marubio, L; Eur J Pharmacol 2000, V393, P113 CAPLUS
- (16) Orr-Urtreger, A; J Neurosci 1997, V17, P9165 CAPLUS
- (17) Peng, X; Mol Pharmacol 1994, V45, P546 CAPLUS
- (18) Seguela, P; J Neurosci 1993, V13, P596 CAPLUS
- (19) Shoop, R; J Neurosci 2000, V20, P4021 CAPLUS
- (20) Shoop, R; J Neurosci 2001, V21, P771 CAPLUS
- (21) Steinlein, O; Behav Brain Res 1998, V95, P31 CAPLUS
- (22) Tracey, K; Annu Rev Med 1994, V45, P491 CAPLUS
- (23) Tracey, K; Nature 1987, V330, P662 CAPLUS
- (24) Tracey, K; Nature 2002, V420, P853 CAPLUS
- (25) Tracey, K; Science 1986, V234, P470 CAPLUS
- (26) Vijayaraghavan, S; Neuron 1992, V8, P353 CAPLUS
- (27) Wang, H; Science 1999, V285, P248 CAPLUS

```
=> (alpha7 or alpha-7 or alpha 7) (S)nicotinic and (rheumatoid arthritis or RA)
      257 ALPHA7
      1538591 ALPHA
      2538498 7
      5868 ALPHA-7
      (ALPHA(W) 7)
      1538591 ALPHA
      2538493 7
      5863 ALPHA 7
      (ALPHA(W) 7)
      34587 NICOTINIC
      1097 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC
      25379 RHEUMATOID
      36436 ARTHRITIS
      22147 RHEUMATOID ARTHRITIS
      (RHEUMATOID(W) ARTHRITIS)
      37814 RA
L9      5 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC AND (RHEUMATOID ARTHR
      ITIS OR RA)
```

=>

=> d 1-5 bib

```
L9 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:223087 CAPLUS
TI Autonomic neural regulation of immunity
AU Czura, C. J.; Tracey, K. J.
CS North Shore-LIJ Research Institute, Center for Patient Oriented Research,
  Manhasset, NY, USA
SO Journal of Internal Medicine (2005), 257(2), 156-166
  CODEN: JINMEO; ISSN: 0954-6820
PB Blackwell Publishing Ltd.
DT Journal
LA English
RE.CNT 75 THERE ARE 75 CITED REFERENCES AVAILABLE FOR THIS RECORD
  ALL CITATIONS AVAILABLE IN THE RE FORMAT
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L9 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:633526 CAPLUS
 DN 141:167817
 TI Treatment of diseases with alpha-7 NACH receptor full agonists
 IN Groppi, Vincent Edward, Jr.; Rogers, Bruce Nelsen; Rudmann, Daniel Gregory
 PA Pharmacia & Upjohn Company, USA
 SO PCT Int. Appl., 142 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004064836	A2	20040805	WO 2004-IB115	20040112
	WO 2004064836	A3	20041223		
	W:				
	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB,				
	BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR,				
	CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG,				
	ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU,				
	ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ,				
	KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN,				
	MW, MX, MX, MZ				

PRAI US 2003-441801P P 20030122

OS MARPAT 141:167817

L9 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:513538 CAPLUS
 DN 141:65099
 TI Inhibition of inflammation using .alpha.7
 nicotinic receptor-binding cholinergic agonists
 IN Tracey, Kevin J.; Wang, Hong
 PA North Shore-Long Island Jewish Research Institute, USA
 SO PCT Int. Appl., 75 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004052365	A2	20040624	WO 2003-US38708	20031205
	WO 2004052365	A3	20040923		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,				
	LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,				
	NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,				
	TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:				
	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,				
	BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,				
	ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,				
	TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2004204355	A1	20041014	US 2003-729427	20031205

PRAI US 2002-431650P P 20021206

OS MARPAT 141:65099

L9 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 2003:892762 CAPLUS
 DN 139:395938
 TI Preparation of ureas as positive allosteric modulators of the nicotinic
 acetylcholine receptor
 IN Piotrowski, David W.; Rogers, Bruce N.; McWhorter, William W., Jr.;
 Walker, Daniel P.; Corbett, Jeffrey W.; Groppi, Vincent E., Jr.; Rudmann,
 Daniel G.
 PA Pharmacia & Upjohn Company, USA

SO PCT Int. Appl., 159 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003093250	A2	20031113	WO 2003-US11493	20030428
	WO 2003093250	A3	20041223		
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003236287	A1	20031225	US 2003-423062	20030425
	US 2004249150	A1	20041209	US 2004-879849	20040629
	US 2004254373	A1	20041216	US 2004-880781	20040630
PRAI	US 2002-377364P	P	20020503		
	US 2003-456941P	P	20030324		
	US 2003-441750P	P	20030122		
	US 2003-423062	A3	20030425		
OS	MARPAT 139:395938				

L9 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:54246 CAPLUS
DN 138:186295

TI Nicotinic acetylcholine receptor .alpha.7

subunit is an essential regulator of inflammation

AU Wang, Hong; Yu, Man; Ochani, Mahendar; Amella, Carol Ann; Tanovic, Mahira; Susarla, Seenu; Li, Jian Hua; Wang, Haichao; Yang, Huan; Ulloa, Luis; Al-Abed, Yousef; Czura, Christopher J.; Tracey, Kevin J.

CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, Manhasset, NY, 11030, USA

SO Nature (London, United Kingdom) (2003), 421(6921), 384-388

CODEN: NATUAS; ISSN: 0028-0836

PB Nature Publishing Group

DT Journal

LA English

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

82.09

95.63

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

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-8.76

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PASSWORD:

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NEWS	6	FEB 28	MEDLINE/LMEDLINE reloaded
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NEWS	8	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	9	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	10	MAR 22	KOREAPAT now updated monthly; patent information enhanced
NEWS	11	MAR 22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	12	MAR 22	PATDPASPC - New patent database available
NEWS	13	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	14	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	15	APR 04	EMBASE - Database reloaded and enhanced
NEWS	16	APR 18	New CAS Information Use Policies available online
NEWS	17	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS	18	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAPLUS
NEWS EXPRESS			JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005
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FILE 'HOME' ENTERED AT 15:51:04 ON 04 MAY 2005

=> index medicine health pharmacology
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS

	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS, CEN, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ESBIODBASE, IFIPAT, IMSDRUGNEWS, IMSPRODUCT, IPA, JICST-EPLUS, KOSMET, LIFESCI, MEDICONF, MEDLINE, NAPRALERT, ...' ENTERED AT 15:51:25 ON 04 MAY 2005

78 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> .s bungarotoxin and (rheumatoid arthritis or RA)

- 1 FILE ADISNEWS
- 5 FILE BIOSIS
- 1 FILE CANCERLIT
- 4 FILE CAPLUS
- 1 FILE DDFB
- 1 FILE DRUGB
- 1 FILE DRUGU
- 9 FILE EMBASE
- 3 FILE IFIPAT
- 1 FILE JICST-EPLUS

23 FILES SEARCHED...

- 1 FILE LIFESCI
- 5 FILE MEDLINE
- 4 FILE SCISEARCH
- 6 FILE TOXCENTER
- 72 FILE USPATFULL
- 4 FILE USPAT2
- 3 FILE NTIS

71 FILES SEARCHED...

17 FILES HAVE ONE OR MORE ANSWERS, 78 FILES SEARCHED IN STNINDEX

L1 QUE BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d rank

F1	72	USPATFULL
F2	9	EMBASE
F3	8	IFIPAT
F4	6	TOXCENTER
F5	5	BIOSIS
F6	5	MEDLINE
F7	4	CAPLUS
F8	4	SCISEARCH
F9	4	USPAT2
F10	3	NTIS
F11	1	ADISNEWS
F12	1	CANCERLIT
F13	1	DDFB
F14	1	DRUGB
F15	1	DRUGU
F16	1	JICST-EPLUS
F17	1	LIFESCI

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COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
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FULL ESTIMATED COST

FILE 'MEDLINE' ENTERED AT 15:53:06 ON 04 MAY 2005

FILE LAST UPDATED: 3 MAY 2005 (20050503/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP
RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s bungarotoxin and (rheumatoid arthritis or RA)

3230 BUNGAROTOXIN
80268 RHEUMATOID
109889 ARTHRITIS
47480 RHEUMATOID ARTHRITIS
(RHEUMATOID (W) ARTHRITIS)
435794 RA

L2 5 BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1-5 bib

L2 ANSWER 1 OF 5 MEDLINE on STN
AN 2004357989 MEDLINE
DN PubMed ID: 15262210
TI Nicotine-mediated plasticity in robust nucleus of the archistriatum of the
adult zebra finch.
AU Salgado-Commissariat Delanthi; Rosenfield David B; Helekar Santosh A
CS Speech and Language Center, Department of Neurology, Baylor College of
Medicine, 6501 Fannin Street, NB 422, Houston, TX 77030, USA..
delanthi@bcm.tmc.edu
SO Brain research, (2004 Aug 20) 1018 (1) 97-105.
Journal code: 0045503. ISSN: 0006-8993.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200410
ED Entered STN: 20040721
Last Updated on STN: 20041007
Entered Medline: 20041006

L2 ANSWER 2 OF 5 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator
of inflammation.
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636

AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira;
Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed
Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research
Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication:
2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307

L2 ANSWER 3 OF 5 MEDLINE on STN
AN 95257477 MEDLINE
DN PubMed ID: 7739124
TI Measurement of anti-acetylcholine receptor antibody using human
rhabdomyosarcoma cell line.
AU Ito R; Ishiguro Y; Tetsumoto T; Harada H; Takanashi N; Oka M; Shindo Y;
Yamauchi S; Ishigami T; Ohta K; +
CS SRL Inc. Department of Diagnostic Reagent, Hachioji.
SO Rinsho byori. Japanese journal of clinical pathology, (1995 Apr) 43 (4)
402-8.
Journal code: 2984781R. ISSN: 0047-1860.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
FS Priority Journals
EM 199506
ED Entered STN: 19950615
Last Updated on STN: 19970203
Entered Medline: 19950607

L2 ANSWER 4 OF 5 MEDLINE on STN
AN 88026529 MEDLINE
DN PubMed ID: 3664371
TI Acetylcholine receptor antibodies in myasthenia gravis: use of a
qualitative assay for diagnostic purposes.
AU Oger J; Kaufman R; Berry K
CS Department of Medicine (Neurology), University of British Columbia,
Vancouver, Canada.
SO Canadian journal of neurological sciences. Le journal canadien des
sciences neurologiques, (1987 Aug) 14 (3) 297-302.
Journal code: 0415227. ISSN: 0317-1671.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198712
ED Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19871215

L2 ANSWER 5 OF 5 MEDLINE on STN
AN 82245448 MEDLINE
DN PubMed ID: 7099199
TI D-Penicillamine-associated myasthenia gravis: immunological and
electrophysiological studies.
AU Fawcett P R; McLachlan S M; Nicholson L V; Argov Z; Mastaglia F L
SO Muscle & nerve, (1982 Apr) 5 (4) 328-34.
Journal code: 7803146. ISSN: 0148-639X.

CY United States
 DT (CASE REPORTS)
 Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 198209
 ED Entered STN: 19900317
 Last Updated on STN: 19900317
 Entered Medline: 19820910

=> d 4 all

L2 ANSWER 4 OF 5 MEDLINE on STN
 AN 88026529 MEDLINE
 DN PubMed ID: 3664371
 TI Acetylcholine receptor antibodies in myasthenia gravis: use of a qualitative assay for diagnostic purposes.
 AU Oger J; Kaufman R; Berry K
 CS Department of Medicine (Neurology), University of British Columbia, Vancouver, Canada.
 SO Canadian journal of neurological sciences. Le journal canadien des sciences neurologiques, (1987 Aug) 14.(3) 297-302.
 Journal code: 0415227. ISSN: 0317-1671.
 CY Canada
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 198712
 ED Entered STN: 19900305
 Last Updated on STN: 19900305
 Entered Medline: 19871215
 AB We have modified the techniques of Lindstrom and of Tindall to measure serum acetylcholine receptor antibody using human antigen bound to 125I-alpha Bungarotoxin. By using 10 microliters of serum and precipitating antigen-antibody complexes with an excess of staph A, we found that only one out of 43 patients with clinically diagnosed active generalized Myasthenia Gravis had no antibodies. In pooling these results with the results of tests done for diagnostic purposes we found positive results in 54/55 generalized active MG, 8/21 MG in remission, 16/37 ocular MG and 0/55 healthy controls. Two out of 38 non MG were also positive and their clinical diagnosis of botulism and penicillamine treated rheumatoid arthritis have been confirmed by a one year follow-up. Most of these sera were also tested for reactivity with fetal calf AChR. Six out of 49 samples positive with the human receptor were negative with calf receptor. We conclude that our technique is extremely useful for the diagnosis of Myasthenia Gravis and that fetal calf antigen cannot replace human antigen in the assay.
 CT Animals
 *Autoantibodies: AN, analysis
 Bungarotoxins: DU, diagnostic use
 Cattle
 Humans
 Immunologic Tests: MT, methods
 *Myasthenia Gravis: DI, diagnosis
 Myasthenia Gravis: IM, immunology
 Predictive Value of Tests
 *Receptors, Nicotinic: IM, immunology
 Research Support, Non-U.S. Gov't
 RN 77097-81-5 (iodo-alpha-bungarotoxin)
 CN 0 (Autoantibodies); 0 (Bungarotoxins); 0 (Receptors, Nicotinic)

=> file toxcenter
 COST IN U.S. DOLLARS

SINCE FILE TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	2.59	4.57

FILE 'TOXCENTER' ENTERED AT 15:55:21 ON 04 MAY 2005
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FILE COVERS 1907 TO 3 May 2005 (20050503/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TOXCENTER has been enhanced with new files segments and search fields.
See HELP CONTENT for more information.

TOXCENTER thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary. See <http://www.nlm.nih.gov/mesh/> and http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html for a description of changes.

=> s bungarotoxin and (rheumatoid arthritis or RA)

6320 BUNGAROTOXIN.
25468 RHEUMATOID
35583 ARTHRITIS
20208 RHEUMATOID ARTHRITIS
(RHEUMATOID(W) ARTHRITIS)
38265 RA

L3 .6 BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1-6 bib

L3 ANSWER 1 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN

AN 1995:163226 TOXCENTER

CP Copyright 2005 ACS

DN CA12301007672N

TI Measurement of anti-acetylcholine receptor antibody using human rhabdomyosarcoma cell line

AU Ito, Rie; Ishiguro, Yayoi; Tetsumoto, Toru; Harada, Hirotomo; Takanashi, Naoki; Oka, Masanori; Shindo, Yukiko; Yamauchi, Shigeki; Ishigami, Tatsuzo; et al.

CS Dep. Diagn. Reagent, SRL Inc., Hachioji, 192, Japan.

SO Rinsho Byori, (1995) Vol. 43, No. 4, pp. 402-8.

CODEN: RBYOAI. ISSN: 0047-1860.

CY JAPAN

DT Journal

FS CAPLUS

OS CAPLUS 1995:527188

LA Japanese

ED Entered STN: 20011116

Last Updated on STN: 20020903

L3 ANSWER 2 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN

AN 1992:139193 TOXCENTER

CP Copyright 2005 ACS

DN CA11623228778J

TI Muscarinic binding sites in a catecholaminergic human neuroblastoma cell line

AU Sorrentino, Giuseppe; Singh, Indrapal N.; Hubsch, Alphonse; Kanfer, Julian N.; Mykita, Serge; Massarelli, Raphael

CS Dep. Biochem. Mol. Biol., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can..

SO Neurochemical Research, (1992) Vol. 17, No. 3, pp. 215-22.

CODEN: NEREDZ. ISSN: 0364-3190.

CY CANADA

DT Journal
 FS CAPLUS
 OS CAPLUS 1992:228778
 LA English
 ED Entered STN: 20011116
 Last Updated on STN: 20021008

L3 ANSWER 3 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
 AN 1987:96704 TOXCENTER
 CP Copyright (c) 2005 The Thomson Corporation
 DN PREV198733095675
 TI THE USEFULNESS OF A QUALITATIVE ASSAY FOR ACETYLCHOLINE RECEPTOR
 ANTIBODIES IN THE DIAGNOSIS OF MYASTHENIA GRAVIS
 AU OGER J [Reprint author]
 CS VANCOUVER, BC
 SO Canadian Journal of Neurological Sciences, (1987) Vol. 14, No. 2, pp. 218.
 Meeting Info.: XXIIND CANADIAN CONGRESS OF NEUROLOGICAL SCIENCES,
 VANCOUVER, BRITISH COLUMBIA, CANADA, JUNE 24-27, 1987. CAN J NEUROL SCI
 CODEN: CJNSA2. ISSN: 0317-1671.
 DT Conference; (Meeting)
 FS BIOSIS
 OS BIOSIS 1987:436848
 LA ENGLISH
 ED Entered STN: 20011116
 Last Updated on STN: 20011116

L3 ANSWER 4 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
 AN 1983:64825 TOXCENTER
 CP Copyright (c) 2005 The Thomson Corporation
 DN PREV198375007531
 TI D PENICILLAMINE ASSOCIATED MYASTHENIA GRAVIS IMMUNOLOGICAL AND ELECTRO
 PHYSIOLOGICAL STUDIES
 AU FAWCETT P R W [Reprint author]; MCLACHLAN S M; NICHOLSON L V B; ARGOV Z;
 MASTAGLIA F L
 CS MUSCULAR DYSTROPHY GROUP RES LAB, REGIONAL NEUROLOGICAL CENT,
 NEWCASTLE-UPON-TYNE, ENGL, UK
 SO Muscle and Nerve, (1982) Vol. 5, No. 4, pp. 328-334.
 CODEN: MUNEDE. ISSN: 0148-639X.
 DT Article
 FS BIOSIS
 OS BIOSIS 1983:157531
 LA ENGLISH
 ED Entered STN: 20011116
 Last Updated on STN: 20011116

L3 ANSWER 5 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
 AN 1982:35008 TOXCENTER
 DN PubMed ID: 7099199
 TI D-Penicillamine-associated myasthenia gravis: immunological and
 electrophysiological studies
 AU Fawcett P R; McLachlan S M; Nicholson L V; Argov Z; Mastaglia F L
 SO Muscle & nerve, (1982 Apr) 5 (4) 328-34.
 Journal Code: 7803146. ISSN: 0148-639X.
 CY United States
 DT (CASE REPORTS)
 Journal; Article; (JOURNAL ARTICLE)
 FS MEDLINE
 CS MEDLINE 82245448
 LA English
 ED Entered STN: 20011116
 Last Updated on STN: 20011116

L3 ANSWER 6 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
 AN 1980:39382 TOXCENTER
 CP Copyright (c) 2005 The Thomson Corporation

DN PREV198018031039
 TI MYASTHENIA ASSOCIATED WITH D PENICILLAMINE THERAPY IN RHEUMATOID ARTHRITIS
 AU BUCKNALL R C [Reprint author]; BALINT G; DAWKINS R L
 CS DEP MED, UNIV BRISTOL R INFIRM, BRISTOL BS2 8HW, ENGL, UK
 SO Scandinavian Journal of Rheumatology Supplement, (1979) No. 28, pp. 91-93.
 Meeting Info.: PROCEEDINGS OF THE 2ND BERTINE KOPERBERG CONFERENCE ON
 FUNDAMENTAL STUDIES ON PENICILLAMINE FOR RHEUMATOID DISEASES, OOSTERBECK,
 NETHERLANDS, SEPT. 14-15, 1978. SCAND J RHEUMATOL SUPPL
 CODEN: SJRSAS. ISSN: 0301-3847.
 DT Conference; (Meeting)
 Conference; Abstract; (Meeting Abstract)
 FS BIOSIS
 OS BIOSIS 1980:31039
 LA ENGLISH
 ED Entered STN: 20011116
 Last Updated on STN: 20011116

=> d 6 all

L3 ANSWER 6 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
 AN 1980:39382 TOXCENTER
 CP Copyright (c) 2005 The Thomson Corporation
 DN PREV198018031039
 TI MYASTHENIA ASSOCIATED WITH D PENICILLAMINE THERAPY IN RHEUMATOID ARTHRITIS
 AU BUCKNALL R C [Reprint author]; BALINT G; DAWKINS R L
 CS DEP MED, UNIV BRISTOL R INFIRM, BRISTOL BS2 8HW, ENGL, UK
 SO Scandinavian Journal of Rheumatology Supplement, (1979) No. 28, pp. 91-93.
 Meeting Info.: PROCEEDINGS OF THE 2ND BERTINE KOPERBERG CONFERENCE ON
 FUNDAMENTAL STUDIES ON PENICILLAMINE FOR RHEUMATOID DISEASES, OOSTERBECK,
 NETHERLANDS, SEPT. 14-15, 1978. SCAND J RHEUMATOL SUPPL
 CODEN: SJRSAS. ISSN: 0301-3847.
 DT Conference; (Meeting)
 Conference; Abstract; (Meeting Abstract)
 FS BIOSIS
 OS BIOSIS 1980:31039
 LA ENGLISH
 ED Entered STN: 20011116
 Last Updated on STN: 20011116
 CC General biology - Symposia, transactions and proceedings 00520
 Genetics - Human 03508
 Biochemistry studies - General 10060
 Biochemistry studies - Proteins, peptides and amino acids 10064
 Biochemistry studies - Carbohydrates 10068
 Biophysics - Methods and techniques 10504
 Pathology - Comparative 12503
 Pathology - Diagnostic 12504
 Pathology - Inflammation and inflammatory disease 12508
 Pathology - Therapy 12512
 Metabolism - Carbohydrates 13004
 Metabolism - Minerals 13010
 Metabolism - Proteins, peptides and amino acids 13012
 Metabolism - Metabolic disorders 13020
 Digestive system - Pathology 14006
 Blood - Blood, lymphatic and reticuloendothelial pathologies 15006
 Muscle - Pathology 17506
 Bones, joints, fasciae, connective and adipose tissue - Pathology 18006
 Dental biology - Physiology and biochemistry 19004
 Nervous system - Pathology 20506
 Pharmacology - Drug metabolism and metabolic stimulators 22003
 Pharmacology - Clinical pharmacology 22005
 Pharmacology - Connective tissue, bone and collagen-acting drugs 22012
 Pharmacology - Digestive system 22014

Pharmacology - Immunological processes and allergy 22018
Pharmacology - Neuropharmacology 22024
Routes of immunization, infection and therapy 22100
Toxicology - General and methods 22501
Toxicology - Pharmacology 22504
Gerontology - 24500
Immunology - General and methods 34502
Immunology - Immunopathology, tissue immunology 34508

ST Major Concepts

Clinical Endocrinology (Human Medicine, Medical Sciences);
Gastroenterology (Human Medicine, Medical Sciences); Metabolism;
Muscular System (Movement and Support); Neurology (Human Medicine,
Medical Sciences); Pathology; Pharmacology; Skeletal System (Movement
and Support); Toxicology

ST Miscellaneous Descriptors

NOTE HUMAN ANTIBODY BUNGAROTOXIN ACETYL CHOLINE RECEPTOR PROTEIN
WILSONS DISEASE AUTO IMMUNE DISEASE SIDE EFFECT AGE

ORGN Classifier

Serpentes 85410

Super Taxa

Reptilia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Chordates, Nonhuman Vertebrates, Reptiles, Vertebrates

ORGN Classifier

Hominidae 86215

Super Taxa

Primates; Mammalia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Chordates, Humans, Mammals, Primates, Vertebrates

RN 52-57-5 (D-PENICILLAMINE)

37209-28-2 (BUNGAROTOXIN)

51-84-3 (ACETYLCHOLINE)

=> d 6 full

'FULL' IS NOT A VALID FORMAT FOR FILE 'TOXCENTER'

The following are valid formats:

The default display format is BIB.

ABS ---- AN, CP, AB

ALL ---- AN, CP, DN, TI, CM, AU, CS, CSS, NC, ON,
PI, SO, CY, DT, FS, OS, LA, SL, ED, DB, DE,
AB, SC, CC, BC, CT, ST, CO, NA, GT, ORGN,
RN, CN, GEN

BIB ---- AN, CP, DN, TI, CM, AU, CS, CSS, NC, ON,
PI, SO, CY, DT, FS, OS, LA, SL, ED, DB, DE

CBIB --- AN, CP, DN, TI, CM, AU, CS, CSS, PI, SO,
CY, LA, SL

DALL --- Displays the same data as ALL.

IABS --- AN, CP, AB

IALL --- Displays the same data as ALL.

IBIB --- Displays the same data as BIB.

IND ---- AN, CP, SC, CC, BC, CT, ST, CO, NA, GT, ORGN,
RN, CN, GEN

SCAN --- TI, CM, CN

HIT ---- Displays the entire field containing a hit term or terms.

HITIND - Displays the same data as IND.

KWIC --- Displays 20 words on either side of a hit term.

OCC ---- Displays field name and number of occurrences where hit
terms are found.

Hit terms will be highlighted in all displayable fields.

To display a particular field or fields, enter the display field codes. For a list of display field codes, enter 'HELP DFIELDS' at an arrow prompt (=>). Examples of formats include: 'BIB'; 'AB'; 'SO,ST'. You may specify the format fields in any order, and the information will be displayed in the same order as the format specification.

The same formats (except for HIT, KWIC, and OCC) may be used with the DISPLAY ACC command to display the record for a specified Accession Number.
ENTER DISPLAY FORMAT (BIB):end

```
=> file caplus
COST IN U.S. DOLLARS                SINCE FILE      TOTAL
                                     ENTRY      SESSION
FULL ESTIMATED COST                9.77      14.34
```

FILE 'CAPLUS' ENTERED AT 15:57:13 ON 04 MAY 2005
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FILE COVERS 1907 - 4 May 2005 VOL 142 ISS 19
FILE LAST UPDATED: 3 May 2005 (20050503/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s bungarotoxin and (rheumatoid arthritis or RA)
      3510 BUNGAROTOXIN
      25379 RHEUMATOID
      36436 ARTHRITIS
      22147 RHEUMATOID ARTHRITIS
            (RHEUMATOID(W) ARTHRITIS)
      37814 RA
L4      4 BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)
```

```
=> d 1-4 bib
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```
L4  ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2005 ACS on STN
AN  2004:513538  CAPLUS
DN  141:65099
TI  Inhibition of inflammation using  $\alpha 7$  nicotinic receptor-binding
    cholinergic agonists
IN  Tracey, Kevin J.; Wang, Hong
PA  North Shore-Long Island Jewish Research Institute, USA
SO  PCT Int. Appl., 75 pp.
    CODEN: PIXXD2
DT  Patent
LA  English
FAN.CNT 1
      PATENT NO.      KIND      DATE      APPLICATION NO.      DATE
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 PI WO 2004052365 A2 20040624 WO 2003-US38708 20031205
 WO 2004052365 A3 20040923
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
 NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 US 2004204355 A1 20041014 US 2003-729427 20031205
 PRAI US 2002-431650P P 20021206
 OS MARPAT 141:65099

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 2001:868225 CAPLUS
 DN 136:625
 TI Inhibition of inflammatory cytokine production by cholinergic agonists and
 vagus nerve stimulation
 IN Tracey, Kevin J.
 PA North Shore-Long Island Jewish Research Institute, USA
 SO PCT Int. Appl., 62 pp.
 CODEN: PIXXD2
 PT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2001089526	A1	20011129	WO 2001-US15708	20010516	
	W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	US 2002016344	A1	20020207	US 2001-855446	20010515	
	US 6610713	B2	20030826			
	CA 2408791	AA	20011129	CA 2001-2408791	20010516	
	EP 1307196	A1	20030507	EP 2001-935542	20010516	
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	JP 2004510695	T2	20040408	JP 2001-585770	20010516	
	US 2004038857	A1	20040226	US 2003-446625	20030528	
	US 6838471	B2	20050104			
PRAI	US 2000-206364P	P	20000523			
	US 2001-855446	A	20010515			
	WO 2001-US15708	W	20010516			
RE.CNT	5	THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT.				

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1995:527188 CAPLUS
 DN 123:7672
 TI Measurement of anti-acetylcholine receptor antibody using human
 rhabdomyosarcoma cell line
 AU Ito, Rie; Ishiguro, Yayoi; Tetsumoto, Toru; Harada, Hirotomo; Takanashi,
 Naoki; Oka, Masanori; Shindo, Yukiko; Yamauchi, Shigeki; Ishigami,
 Tatsuzo; et al.
 CS Dep. Diagn. Reagent, SRL Inc., Hachioji, 192, Japan

SO Rinsho Byori (1995), 43(4), 402-8
CODEN: RBYOAI; ISSN: 0047-1860
DT Journal
LA Japanese

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1992:228778 CAPLUS
DN 116:228778
TI Muscarinic binding sites in a catecholaminergic human neuroblastoma cell line
AU Sorrentino, Giuseppe; Singh, Indrapal N.; Hubsch, Alphonse; Kanfer, Julian N.; Mykita, Serge; Massarelli, Raphael
CS Dep. Biochem. Mol. Biol., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can.
SO Neurochemical Research (1992), 17(3), 215-22
CODEN: NEREDZ; ISSN: 0364-3190
DT Journal
LA English

=> file medline

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	13.31	27.65

FILE 'MEDLINE' ENTERED AT 15:58:45 ON 04 MAY 2005

FILE LAST UPDATED: 3 MAY 2005 (20050503/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s (alpha7 or alpha-7 or alpha 7) (L) (tnf or tumor necrosis factor)

978 ALPHA7
521802 ALPHA
1376236 7
1418 ALPHA-7
(ALPHA(W) 7)
521802 ALPHA
1376236 7
1418 ALPHA 7
(ALPHA(W) 7)
50065 TNF
594700 TUMOR
156643 NECROSIS
682620 FACTOR
65608 TUMOR NECROSIS FACTOR
(TUMOR(W) NECROSIS(W) FACTOR)

L5 36 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (L) (TNF OR TUMOR NECROSIS FACTOR)

=> d 1-36 bib

L5 ANSWER 1 OF 36 MEDLINE on STN

AN 2005176582 IN-PROCESS
 DN PubMed ID: 15809354
 TI Cholinergic stimulation blocks endothelial cell activation and leukocyte recruitment during inflammation.
 AU Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara; Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz Christine N
 CS North Shore-LIJ, Manhasset, NY 11030.
 SO Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.
 Journal code: 2985109R. ISSN: 0022-1007.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
 ED Entered STN: 20050406
 Last Updated on STN: 20050406

L5 ANSWER 2 OF 36 MEDLINE on STN
 AN 2005151682 IN-PROCESS
 DN PubMed ID: 15785303
 TI Growth hormone-induced reduction of soluble apoptosis mediators is associated with reverse cardiac remodelling and improvement of exercise capacity in patients with idiopathic dilated cardiomyopathy.
 AU Parissis John T; Adamopoulos Stamatis; Karatzas Dimitrios; Paraskevaidis John; Livanis Efthimios; Kremastinos Dimitrios
 CS Second Department of Cardiovascular Medicine, Onassis Cardiac Surgery Centre Athens, Greece.
 SO European journal of cardiovascular prevention and rehabilitation : official journal of the European Society of Cardiology, Working Groups on Epidemiology & Prevention and Cardiac Rehabilitation and Exercise Physiology, (2005 Apr) 12 (2) 164-8.
 Journal code: 101192000. ISSN: 1741-8267.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
 ED Entered STN: 20050324
 Last Updated on STN: 20050324

L5 ANSWER 3 OF 36 MEDLINE on STN
 AN 2005011836 IN-PROCESS
 DN PubMed ID: 15636707
 TI Protective effect of the cholinergic anti-inflammatory pathway against hemorrhagic shock in rats.
 AU Li Jian-guo; Hu Zheng-fang; Du Zhao-hui; Zhou Qing; Jia Bao-hui; Peng Zhou-quan; Ye Xiao-feng; Li Bei
 CS Zhongnan Hospital, Wuhan University, Wuhan 430071, Hubei, China.
 SO Zhongguo wei zhong bing ji jiu yi xue = Chinese critical care medicine = Zhongguo weizhongbing jijiuyixue, (2005 Jan) 17 (1) 24-7.
 Journal code: 9887521. ISSN: 1003-0603.
 CY China
 DT Journal; Article; (JOURNAL ARTICLE)
 LA Chinese
 FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
 ED Entered STN: 20050108
 Last Updated on STN: 20050413

L5 ANSWER 4 OF 36 MEDLINE on STN
 AN 2004610297 IN-PROCESS
 DN PubMed ID: 15498533
 TI Induced sputum in cystic fibrosis: within-week reproducibility of inflammatory markers.
 AU Smountas Argyrios A; Lands Larry C; Mohammed Shawn R; Grey Vijaylaxmi
 CS Department of Respiratory Medicine, McGill University Medical Centre, Montreal Children's Hospital, Montreal, 2300 Tupper Street, Montreal,

Quebec, Canada H3H 1P3.

SO Clinical biochemistry, (2004 Nov) 37 (11) 1031-6.
Journal code: 0133660. ISSN: 0009-9120.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals

ED Entered STN: 20041209
Last Updated on STN: 20041219

L5 ANSWER 5 OF 36 MEDLINE on STN

AN 2004545484 MEDLINE

DN PubMed ID: 15502843

TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.

CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907

AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis

CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.

SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.
Journal code: 9502015. ISSN: 1078-8956.

CY United States

DT : Journal; Article; (JOURNAL ARTICLE)

LA : English

FS : Priority Journals

EM : 200502

ED : Entered STN: 20041102
Last Updated on STN: 20050205
Entered Medline: 20050204

L5 ANSWER 6 OF 36 MEDLINE on STN

AN : 2004436284 MEDLINE

DN : PubMed ID: 15342104

TI : Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.

AU : Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F

CS : Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.

SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
Journal code: 7605818. ISSN: 0361-9230.

CY : United States

DT : Journal; Article; (JOURNAL ARTICLE)

LA : English

FS : Priority Journals

EM : 200411

ED : Entered STN: 20040903
Last Updated on STN: 20041219
Entered Medline: 20041129

L5 ANSWER 7 OF 36 MEDLINE on STN

AN : 2004386823 MEDLINE

DN : PubMed ID: 15290911

TI : Circulating monocytes and plasma inflammatory biomarkers in active Crohn's disease: elevated oxidized low-density lipoprotein and the anti-inflammatory effect of atorvastatin.

AU : Grip Olof; Janciauskiene Sabina; Lindgren Stefan

CS : Gastroenterology and Hepatology Division, Department of Medicine, Lund University, Malmo University Hospital, Malmo, Sweden..
olof.grip@medforsk.mas.lu.se

SO Inflammatory bowel diseases, (2004 May) 10 (3) 193-200.

Journal code: 9508162. ISSN: 1078-0998.

CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200409
ED Entered STN: 20040805
Last Updated on STN: 20040924
Entered Medline: 20040923

L5 ANSWER 8 OF 36 MEDLINE on STN

AN 2004305950 MEDLINE

DN PubMed ID: 14993259

TI The expression and functional role of nicotinic acetylcholine receptors in rat adipocytes.

AU Liu Run-Hua; Mizuta Masanari; Matsukura Shigeru

CS Third Department of Internal Medicine, Miyazaki Medical College, Miyazaki University, Kiyotake, Miyazaki, Japan.

SO Journal of pharmacology and experimental therapeutics, (2004 Jul) 310 (1) 52-8. Electronic Publication: 2004-03-01.
Journal code: 0376362. ISSN: 0022-3565.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200409

ED Entered STN: 20040624

Last Updated on STN: 20040908

Entered Medline: 20040907

L5 ANSWER 9 OF 36 MEDLINE on STN

AN 2004163757 MEDLINE

DN PubMed ID: 15056277

TI Cholinergic modulation of microglial activation by alpha 7 nicotinic receptors.

AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun

CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medicine, Tampa, Florida, USA.

SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.

Journal code: 2985190R. ISSN: 0022-3042.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200405

ED Entered STN: 20040402

Last Updated on STN: 20040505

Entered Medline: 20040504

L5 ANSWER 10 OF 36 MEDLINE on STN

AN 2003579397 MEDLINE

DN PubMed ID: 14659770

TI Effects of growth hormone on circulating cytokine network, and left ventricular contractile performance and geometry in patients with idiopathic dilated cardiomyopathy.

CM Comment in: Eur Heart J. 2003 Dec;24(24):2164-5. PubMed ID: 14659767

AU Adamopoulos Stamatis; Parissis John T; Paraskevaidis Ioannis; Karatzas Dimitrios; Livanis Efthimios; Georgiadis Michael; Karavolias George; Mitropoulos Dimitrios; Degiannis Dimitrios; Kremastinos Dimitrios Th

CS Second Department of Cardiovascular Medicine, Onassis Cardiac Surgery Center, Athens, Greece.. sadamo@bigfoot.com

SO European heart journal, (2003 Dec) 24 (24) 2186-96.

Journal code: 8006263. ISSN: 0195-668X.

CY England: United Kingdom
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)

LA English
FS Priority Journals
EM 200402
ED Entered STN: 20031216
Last Updated on STN: 20040211
Entered Medline: 20040210

L5 ANSWER 11 OF 36 MEDLINE on STN
AN 2003509329 MEDLINE
DN PubMed ID: 14506129

TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.
AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Nouredine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel
CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.
SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
Journal code: 9208958. ISSN: 0964-6906.

CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200407
ED Entered STN: 20031031
Last Updated on STN: 20040709
Entered Medline: 20040708

L5 ANSWER 12 OF 36 MEDLINE on STN
AN 2003354091 MEDLINE
DN PubMed ID: 12730063

TI Age-associated impairment in TNF-alpha cardioprotection from myocardial infarction.
AU Cai Dongqing; Xaymardan Munira; Holm Jacquelyne M; Zheng Jingang; Kizer Jorge R; Edelberg Jay M
CS Department of Medicine, Weill Medical College of Cornell University, 520 East 70th Street, A352, New York, NY 10021, USA.
NC AG 20320 (NIA)
AG 20918 (NIA)
SO American journal of physiology. Heart and circulatory physiology, (2003 Aug) 285 (2) H463-9. Electronic Publication: 2003-05-01.
Journal code: 100901228. ISSN: 0363-6135.

CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200308
ED Entered STN: 20030731
Last Updated on STN: 20030822
Entered Medline: 20030821

L5 ANSWER 13 OF 36 MEDLINE on STN
AN 2003115931 MEDLINE
DN PubMed ID: 12628466

TI A beta-induced TNF-alpha expression and acetylcholine action in mouse glial cells.
AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki
CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.
SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
Journal code: 0375521. ISSN: 0024-3205.

CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200304
ED Entered STN: 20030312
Last Updated on STN: 20030406
Entered Medline: 20030404

L5 ANSWER 14 OF 36 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator of inflammation.
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307

L5 ANSWER 15 OF 36 MEDLINE on STN
AN 2002359187 MEDLINE
DN PubMed ID: 12102593
TI Cytotoxic reaction and TNF-alpha response of macrophages to polyurethane particles.
AU Ma Nan; Petit Alain; Yahia L'Hocine; Huk Olga L; Tabrizian Maryam
CS GRBB, Biomedical Engineering Institute, Ecole Polytechnique, Montreal, QC, Canada.
SO Journal of biomaterials science. Polymer edition, (2002) 13 (3) 257-72.
Journal code: 9007393. ISSN: 0920-5063.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200306
ED Entered STN: 20020710
Last Updated on STN: 20030624
Entered Medline: 20030623

L5 ANSWER 16 OF 36 MEDLINE on STN
AN 2002319179 MEDLINE
DN PubMed ID: 12061429
TI Serum levels of TNF-alpha, sIL-2R, IL-6, and IL-8 are increased and associated with elevated lipid peroxidation in patients with Behcet's disease.
AU Evereklioglu Cem; Er Hamdi; Turkoz Yusuf; Cekmen Mustafa
CS Department of Ophthalmology, Gaziantep University Medical Faculty, Research Hospital, Turkey.. evereklioglu@hotmail.com
SO Mediators of inflammation, (2002 Apr) 11 (2) 87-93.
Journal code: 9209001. ISSN: 0962-9351.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)

LA English
 FS Priority Journals
 EM 200212
 ED Entered STN: 20020614
 Last Updated on STN: 20021217
 Entered Medline: 20021210

L5 ANSWER 17 OF 36 MEDLINE on STN
 AN 2002127489 MEDLINE
 DN PubMed ID: 11849865
 TI Physical training modulates proinflammatory cytokines and the soluble Fas/soluble Fas ligand system in patients with chronic heart failure.
 AU Adamopoulos Stamatis; Parissis John; Karatzas Dimitrios; Kroupis Christos; Georgiadis Michael; Karavolias George; Paraskevaidis John; Konaviatou Katerina; Coats Andrew J S; Kremastinos Dimitrios Th
 CS Second Department of Cardiovascular Medicine, Onassis Cardiac Surgery Center, Athens, Greece.. sadamo@bigfoot.com
 SO Journal of the American College of Cardiology, (2002 Feb 20) 39 (4) 653-63.
 Journal code: 8301365. ISSN: 0735-1097.
 CY United States
 DT (CLINICAL TRIAL)
 Journal; Article; (JOURNAL ARTICLE)
 (RANDOMIZED CONTROLLED TRIAL)

LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 200203
 ED Entered STN: 20020227
 Last Updated on STN: 20020322
 Entered Medline: 20020321

L5 ANSWER 18 OF 36 MEDLINE on STN
 AN 2001669027 MEDLINE
 DN PubMed ID: 11714820
 TI Involvement of nicotinic acetylcholine receptors in suppression of antimicrobial activity and cytokine responses of alveolar macrophages to Legionella pneumophila infection by nicotine.
 AU Matsunaga K; Klein T W; Friedman H; Yamamoto Y
 CS Department of Medical Microbiology and Immunology, University of South Florida College of Medicine, Tampa, FL 33612, USA.
 NC AI45169 (NIAID)
 SO Journal of immunology (Baltimore, Md. : 1950), (2001 Dec 1) 167 (11) 6518-24.
 Journal code: 2985117R. ISSN: 0022-1767.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 200201
 ED Entered STN: 20011121
 Last Updated on STN: 20020124
 Entered Medline: 20020102

L5 ANSWER 19 OF 36 MEDLINE on STN
 AN 2001531775 MEDLINE
 DN PubMed ID: 11578014
 TI Randomized, double-blind trial of anti-interferon-gamma antibodies in rheumatoid arthritis.
 AU Sigidin Y A; Loukina G V; Skurkovich B; Skurkovich S
 CS Rheumatology Institute, Russian Academy of Medical Sciences, Moscow.
 SO Scandinavian journal of rheumatology, (2001) 30 (4) 203-7.
 Journal code: 0321213. ISSN: 0300-9742.
 CY Norway
 DT (CLINICAL TRIAL)
 Journal; Article; (JOURNAL ARTICLE)

(RANDOMIZED CONTROLLED TRIAL)

LA English
FS Priority Journals
EM 200110
ED Entered STN: 20011002
Last Updated on STN: 20011022
Entered Medline: 20011018

L5 ANSWER 20 OF 36 MEDLINE on STN
AN 2001463119 MEDLINE
DN PubMed ID: 11488976
TI Recruitment of mononuclear leucocytes to osteoarthritic human synovial xenografts in the ears of SCID mice.
AU Cleland L G; Fusco M; Proudman S M; Wing S J; Spargo L D; Mayrhofer G
CS The Arthritis Research Laboratory of the Hanson Centre for Cancer Research, Institute of Medical and Veterinary Science, University of Adelaide, Adelaide, Australia.. lcleland@mail.rah.sa.gov.au
SO Immunology and cell biology, (2001 Aug) 79 (4) 309-19.
Journal code: 8706300. ISSN: 0818-9641.
CY Australia
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200112
ED Entered STN: 20010820
Last Updated on STN: 20020121
Entered Medline: 20011205

L5 ANSWER 21 OF 36 MEDLINE on STN
AN 2001423435 MEDLINE
DN PubMed ID: 11312628
TI Effect of hypoxia, oxidative stress and lipopolysaccharides on the release of prostaglandins and cytokines from human term placental explants.
AU Malek A; Sager R; Schneider H
CS Department of Obstetrics and Gynecology, University of Berne, Inselspital, Switzerland.
SO Placenta, (2001 Apr) 22 Suppl A S45-50.
Journal code: 8006349. ISSN: 0143-4004.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200107
ED Entered STN: 20010730
Last Updated on STN: 20021219
Entered Medline: 20010726

L5 ANSWER 22 OF 36 MEDLINE on STN
AN 2001009563 MEDLINE
DN PubMed ID: 11008069
TI Expression of proinflammatory cytokines in the failing human heart: comparison of recent-onset and end-stage congestive heart failure.
AU Kubota T; Miyagishima M; Alvarez R J; Kormos R; Rosenblum W D; Demetris A J; Semigran M J; Dec G W; Holubkov R; McTiernan C F; Mann D L; Feldman A M; McNamara D M
CS Cardiovascular Institute of the UPMC Health System, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania 15213, USA.
SO Journal of heart and lung transplantation : official publication of the International Society for Heart Transplantation, (2000 Sep) 19 (9) 819-24.
Journal code: 9102703. ISSN: 1053-2498.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200010

ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001023

L5 ANSWER 23 OF 36 MEDLINE on STN
AN 2000265106 MEDLINE
DN PubMed ID: 10804903
TI Diminished chemokine and cytokine-induced adhesion of CD4+ T cells to extracellular matrix ligands in patients with end-stage renal failure.
AU Zeltzer E; Bernheim J; Korzets Z; Zeeli D; Rathaus M; Mekori Y A; HersHKoviz R
CS Department of Nephrology, Sapir Medical Center, Kfar Saba, Israel.
SO Israel Medical Association journal : IMAJ, (2000 Apr) 2 (4) 282-6.
Journal code: 100930740. ISSN: 1565-1088.
CY Israel
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200005
ED Entered STN: 20000606
Last Updated on STN: 20000606
Entered Medline: 20000524

L5 ANSWER 24 OF 36 MEDLINE on STN
AN 1999370456 MEDLINE
DN PubMed ID: 10441868
TI [The risk factors for the development of multiple sclerosis in the Moscow population. II. The combination of exogenous and hereditary factors].
FaktoRY riska razvitiia rasseiannogo skleroza v moskovskoi populiatsii.
II. Sochetaniia ekzogennykh i nasledstvennykh faktorov.
AU Gusev E I; Boiko A N; Demina T L; Sudomoina M A; Alekseev A P; Boldyreva M N; Trofimov D Iu; Favorova O O
SO Zhurnal nevrologii i psikhiiatrii imeni S.S. Korsakova / Ministerstvo zdravookhraneniia i meditsinskoi promyshlennosti Rossiiskoi Federatsii, Vserossiiskoe obshchestvo nevrologov [i] Vserossiiskoe obshchestvo psikhiatrov, (1999) 99 (6) 47-52.
Journal code: 9712194.
CY RUSSIA: Russian Federation
DT Journal; Article; (JOURNAL ARTICLE)
LA Russian
FS Priority Journals
EM 199908
ED Entered STN: 19990913
Last Updated on STN: 19990913
Entered Medline: 19990830

L5 ANSWER 25 OF 36 MEDLINE on STN
AN 1999365012 MEDLINE
DN PubMed ID: 10434040
TI Stimulation of serglycin and CD44 mRNA expression in endothelial cells exposed to TNF-alpha and IL-1alpha.
AU Kulseth M A; Kolset S O; Ranheim T
CS Institute for Nutrition Research, Faculty of Medicine, University of Oslo, P.O. Box 1046, Blindern, N-0316, Oslo, Norway.
SO Biochimica et biophysica acta, (1999 Aug 5) 1428 (2-3) 225-32.
Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199909
ED Entered STN: 19991012
Last Updated on STN: 19991012
Entered Medline: 19990927

L5 ANSWER 26 OF 36 MEDLINE on STN
 AN 1999188557 MEDLINE
 DN PubMed ID: 10090171
 TI Fibroblast proliferation by bleomycin stimulated peripheral blood mononuclear cell factors.
 AU Yamamoto T; Katayama I; Nishioka K
 CS Department of Dermatology, Tokyo Medical and Dental University, School of Medicine, Japan.
 SO Journal of rheumatology, (1999 Mar) 26 (3) 609-15.
 Journal code: 7501984. ISSN: 0315-162X.
 CY Canada
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199905
 ED Entered STN: 19990525
 Last Updated on STN: 19990525
 Entered Medline: 19990507

L5 ANSWER 27 OF 36 MEDLINE on STN
 AN 1998037087 MEDLINE
 DN PubMed ID: 9370119
 TI Raised plasma concentrations of parathyroid hormone related peptide in hypercalcemic multiple myeloma.
 AU Horiuchi T; Miyachi T; Arai T; Nakamura T; Mori M; Ito H
 CS Section of Endocrinology, Tokyo Metropolitan Geriatric Hospital, Japan.
 SO Hormone and metabolic research. Hormon- und Stoffwechselforschung. Hormones et metabolisme, (1997 Sep) 29 (9) 469-71.
 Journal code: 0177722. ISSN: 0018-5043.
 CY GERMANY: Germany, Federal Republic of
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199712
 ED Entered STN: 19980109
 Last Updated on STN: 19980109
 Entered Medline: 19971222

L5 ANSWER 28 OF 36 MEDLINE on STN
 AN 97280005 MEDLINE
 DN PubMed ID: 9134379
 TI Daily variation in circulating cytokines and acute-phase proteins correlates with clinical and laboratory indices in community-acquired pneumonia.
 AU Kosmas E N; Baxevanis C N; Papamichail M; Kordossis T
 CS Department of Pulmonary Medicine, A. Fleming General Hospital, Greece.
 SO European journal of clinical investigation, (1997 Apr) 27 (4) 308-15.
 Journal code: 0245331. ISSN: 0014-2972.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199706
 ED Entered STN: 19970709
 Last Updated on STN: 19970709
 Entered Medline: 19970626

L5 ANSWER 29 OF 36 MEDLINE on STN
 AN 96206224 MEDLINE
 DN PubMed ID: 8620605
 TI Modification of viral myocarditis in mice by interleukin-6.
 AU Kanda T; McManus J E; Nagai R; Imai S; Suzuki T; Yang D; McManus B M; Kobayashi I
 CS Department of Laboratory Medicine, Gunma University School of Medicine, Maebashi, Japan.

SO Circulation research, (1996 May) 78 (5) 848-56.
 Journal code: 0047103. ISSN: 0009-7330.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199606
 ED Entered STN: 19960627
 Last Updated on STN: 19960627
 Entered Medline: 19960618

L5 ANSWER 30 OF 36 MEDLINE on STN
 AN 96005176 MEDLINE
 DN PubMed ID: 7548640
 TI [Alpha tumor necrosis factor in central nervous system disease associated with HIV infection].
 El factor de necrosis tumoral alfa en la afectacion del sistema nervioso central asociada a la infeccion por el VIH.
 AU Calvo Manuel E; Arranz Garcia F; Sanchez-Portocarrero J; Roca Arbones V; Puente M; Elias Arcalis A; Perez-Cecilia E; Nieto Sanchez A; Espinos Perez D
 CS Servicio de Medicina Interna I, Hospital Universitario San Carlos, Facultad de Medicina, Universidad Complutense, Madrid.
 SO Anales de medicina interna (Madrid, Spain : 1984), (1995 Jun) 12 (6) 263-6.
 Journal code: 9112183. ISSN: 0212-7199.
 CY Spain
 DT Journal; Article; (JOURNAL ARTICLE)
 LA Spanish
 FS Priority Journals; AIDS
 EM 199511
 ED Entered STN: 19951227
 Last Updated on STN: 19970203
 Entered Medline: 19951120

L5 ANSWER 31 OF 36 MEDLINE on STN
 AN 96003447 MEDLINE
 DN PubMed ID: 7561114
 TI Isoforms of human C4b-binding protein. II. Differential modulation of the C4BPA and C4BPB genes by acute phase cytokines.
 AU Criado Garcia O; Sanchez-Corral P; Rodriguez de Cordoba S
 CS Department of Immunology, Center for Biological Investigations (CSIC), Velazquez, Madrid, Spain.
 SO Journal of immunology (Baltimore, Md. : 1950), (1995 Oct 15) 155 (8) 4037-43.
 Journal code: 2985117R. ISSN: 0022-1767.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 199511
 ED Entered STN: 19951227
 Last Updated on STN: 19970203
 Entered Medline: 19951122

L5 ANSWER 32 OF 36 MEDLINE on STN
 AN 94171963 MEDLINE
 DN PubMed ID: 8126130
 TI Cytokine regulation of trophoblast steroidogenesis.
 AU Feinberg B B; Anderson D J; Steller M A; Fulop V; Berkowitz R S; Hill J A
 CS Fearing Research Laboratory, Department of Obstetrics, Gynecology, and Reproductive Biology, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts 02115.
 NC HD-00815 (NICHD)
 HD-23547 (NICHD)

SO Journal of clinical endocrinology and metabolism, (1994 Mar) 78 (3)
 586-91.
 Journal code: 0375362. ISSN: 0021-972X.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 199404
 ED Entered STN: 19940420
 Last Updated on STN: 19970203
 Entered Medline: 19940412

L5 ANSWER 33 OF 36 MEDLINE on STN
 AN 93347077 MEDLINE
 DN PubMed ID: 8345430
 TI Production of tumor necrosis factor by human cells in vitro and in vivo,
 induced by group B streptococci.
 AU Williams P A; Bohnsack J F; Augustine N H; Drummond W K; Rubens C E; Hill
 H R
 CS Department of Pathology, University of Utah School of Medicine, Salt Lake
 City 84132.
 NC AI 13150 (NIAID)
 AI 22498 (NIAID)
 AI 26733 (NIAID)
 SO Journal of pediatrics, (1993 Aug) 123 (2) 292-300.
 Journal code: 0375410. ISSN: 0022-3476.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 199309
 ED Entered STN: 19930924
 Last Updated on STN: 19930924
 Entered Medline: 19930909

L5 ANSWER 34 OF 36 MEDLINE on STN
 AN 93293642 MEDLINE
 DN PubMed ID: 8514612
 TI Lysosome labilizers potentiate the antitumor effects of tumor necrosis
 factor-alpha.
 AU Masegi T; Kato A; Kitai K; Fukuoka M; Soma K; Ichikawa Y; Nakamura S;
 Watanabe N; Niitsu Y
 CS Biotechnology Research Laboratories, Teijin Limited, Tokyo.
 SO Japanese journal of cancer research : Gann, (1993 Apr) 84 (4) 451-4.
 Journal code: 8509412. ISSN: 0910-5050.
 CY Japan
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199307
 ED Entered STN: 19930806
 Last Updated on STN: 20000303
 Entered Medline: 19930716

L5 ANSWER 35 OF 36 MEDLINE on STN
 AN 93202697 MEDLINE
 DN PubMed ID: 8454308
 TI Interleukin-1 and tumor necrosis factor-mediated regulation of C3 gene
 expression in human astrogloma cells.
 AU Barnum S R; Jones J L; Benveniste E N
 CS Department of Microbiology, University of Alabama, Birmingham 35294.
 NC NS29719 (NINDS)
 SO Glia, (1993 Mar) 7 (3) 225-36.
 Journal code: 8806785. ISSN: 0894-1491.
 CY United States

DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199304
ED Entered STN: 19930507
Last Updated on STN: 19970203
Entered Medline: 19930422

L5 ANSWER 36 OF 36 MEDLINE on STN
AN 90028007 MEDLINE
DN PubMed ID: 2803915
TI Role of prostaglandins in tumour necrosis factor induced weight loss.
AU Mahony S M; Tisdale M J
CS CRC Experimental Chemotherapy Group, Aston University, Birmingham, UK.
SO British journal of cancer, (1989 Jul) 60 (1) 51-5.
Journal code: 0370635. ISSN: 0007-0920.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198912
ED Entered STN: 19900328
Last Updated on STN: 19900328
Entered Medline: 19891218

=> s (alpha7 or alpha-7 or alpha 7) (S)nicotinic(L) (tnf or tumor necrosis factor)
978 ALPHA7
521802 ALPHA
1375236 7
1418 ALPHA-7
(ALPHA(W) 7)
521802 ALPHA
1375236 7
1413 ALPHA 7
(ALPHA(W) 7)
27029 NICOTINIC
50065 TNF
594700 TUMOR
156643 NECROSIS
682620 FACTOR
65608 TUMOR NECROSIS FACTOR
(TUMOR(W) NECROSIS (W) FACTOR)
L6 7 (ALPHA7 OR ALPHA-7 OR ALPHA 7) (S)NICOTINIC(L) (TNF OR TUMOR NECRO
SIS FACTOR)

=> d 1-7 bib

L6 ANSWER 1 OF 7 MEDLINE on STN
AN 2005176582 IN-PROCESS
DN PubMed ID: 15809354
TI Cholinergic stimulation blocks endothelial cell activation and leukocyte
recruitment during inflammation.
AU Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara;
Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz
Christine N
CS North Shore-LIJ, Manhasset, NY 11030.
SO Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.
Journal code: 2985109R. ISSN: 0022-1007.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050406
Last Updated on STN: 20050406

L6 ANSWER 2 OF 7 MEDLINE on STN
 AN 2004545484 MEDLINE
 DN PubMed ID: 15502843
 TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.
 CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907
 AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis
 CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.
 SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.
 Journal code: 9502015. ISSN: 1078-8956.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200502
 ED Entered STN: 20041102
 Last Updated on STN: 20050205
 Entered Medline: 20050204

L6 ANSWER 3 OF 7 MEDLINE on STN
 AN 2004436284 MEDLINE
 DN PubMed ID: 15342104
 TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.
 AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F
 CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.
 SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
 Journal code: 7605818. ISSN: 0361-9230.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200411
 ED Entered STN: 20040903
 Last Updated on STN: 20041219
 Entered Medline: 20041129

L6 ANSWER 4 OF 7 MEDLINE on STN
 AN 2004163757 MEDLINE
 DN PubMed ID: 15056277
 TI Cholinergic modulation of microglial activation by alpha 7 nicotinic receptors.
 AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun
 CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medicine, Tampa, Florida, USA.
 SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.
 Journal code: 2985190R. ISSN: 0022-3042.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200405
 ED Entered STN: 20040402
 Last Updated on STN: 20040505
 Entered Medline: 20040504

L6 ANSWER 5 OF 7 MEDLINE on STN
 AN 2003509329 MEDLINE
 DN PubMed ID: 14506129
 TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.
 AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Nouredine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel
 CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.
 SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
 Journal code: 9208958. ISSN: 0964-6906.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200407
 ED Entered STN: 20031031
 Last Updated on STN: 20040709
 Entered Medline: 20040708

L6 ANSWER 6 OF 7 MEDLINE on STN
 AN 2003115931 MEDLINE
 DN PubMed ID: 12628466
 TI A beta-induced TNF-alpha expression and acetylcholine action in mouse glial cells.
 AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki
 CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.
 SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
 Journal code: 0375521. ISSN: 0024-3205.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200304
 ED Entered STN: 20030312
 Last Updated on STN: 20030406
 Entered Medline: 20030404

L6 ANSWER 7 OF 7 MEDLINE on STN
 AN 2003033986 MEDLINE
 DN PubMed ID: 12508119
 TI Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator of inflammation.
 CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
 Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
 AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
 CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
 SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
 Journal code: 0410462. ISSN: 0028-0836.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200303
 ED Entered STN: 20030124
 Last Updated on STN: 20030308
 Entered Medline: 20030307

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	8.83	36.48

STN INTERNATIONAL LOGOFF AT 16:01:15 ON 04 MAY 2005

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LOGINID:SEPTMXG1614

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS	4	FEB 28	PATDPAFULL - New display fields provide for legal status data from INPADOC
NEWS	5	FEB 28	BABS - Current-awareness alerts (SDIs) available
NEWS	6	FEB 28	MEDLINE/LMEDLINE reloaded
NEWS	7	MAR 02	GBFULL: New full-text patent database on STN
NEWS	8	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	9	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	10	MAR 22	KOREAPAT now updated monthly; patent information enhanced
NEWS	11	MAR 22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	12	MAR 22	PATDPASPC - New patent database available
NEWS	13	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	14	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	15	APR 04	EMBASE - Database reloaded and enhanced
NEWS	16	APR 18	New CAS Information Use Policies available online
NEWS	17	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS	18	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAPLUS
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NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 16:06:27 ON 04 MAY 2005

=> file medline

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'MEDLINE' ENTERED AT 16:06:44 ON 04 MAY 2005

FILE LAST UPDATED: 3 MAY 2005 (20050503/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s bungarotoxin(L)inflamm?

3230 BUNGAROTOXIN

302840 INFLAMM?

L1 13 BUNGAROTOXIN(L) INFLAMM?

=> d 1-13 bib

L1 ANSWER 1 OF 13 MEDLINE on STN

AN 2005149848 IN-PROCESS

DN PubMed ID: 15780465

TI Antinociceptive effects of choline against acute and inflammatory pain.

AU Wang Y; Su D-M; Wang R-H; Liu Y; Wang H

CS Thadweik Academy of Medicine, Beijing 100850, PR China; Beijing Institute of Pharmacology and Toxicology, 27 Taiping Road, Beijing 100850, PR China.

SO Neuroscience, (2005) 132 (1) 49-56.

Journal code: 7605074. ISSN: 0306-4522.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals

ED Entered STN: 20050323
Last Updated on STN: 20050323

L1 ANSWER 2 OF 13 MEDLINE on STN
AN 2005011836 IN-PROCESS
DN PubMed ID: 15636707
TI Protective effect of the cholinergic anti-inflammatory pathway against hemorrhagic shock in rats.
AU Li Jian-guo; Hu Zheng-fang; Du Zhao-hui; Zhou Qing; Jia Bao-hui; Peng Zhou-quan; Ye Xiao-feng; Li Bei
CS Zhongnan Hospital, Wuhan University, Wuhan 430071, Hubei, China.
SO Zhongguo wei zhong bing ji jiu yi xue = Chinese critical care medicine = Zhongguo weizhongbing jijiuyixue, (2005 Jan) 17 (1) 24-7.
Journal code: 9887521. ISSN: 1003-0603.
CY China
DT Journal; Article; (JOURNAL ARTICLE)
LA Chinese
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050108
Last Updated on STN: 20050413

L1 ANSWER 3 OF 13 MEDLINE on STN
AN 2004163757 MEDLINE
DN PubMed ID: 15056277
TI Cholinergic modulation of microglial activation by alpha 7 nicotinic receptors.
AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun
CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medicine, Tampa, Florida, USA.
SO Journal of neurochemistry, (2004 Apr) 39 (2) 337-43.
Journal code: 2985190R. ISSN: 0022-3042.
CY England; United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200405
ED Entered STN: 20040402
Last Updated on STN: 20040505
Entered Medline: 20040504

L1 ANSWER 4 OF 13 MEDLINE on STN
AN 2003133844 MEDLINE
DN PubMed ID: 12648201
TI Chronic intraperitoneal endotoxin treatment in rats induces resistance to d-tubocurarine, but does not produce up-regulation of acetylcholine receptors.
AU Hinohara H; Morita T; Okano N; Kunimoto F; Goto F
CS Department of Anesthesiology and Reanimatology, Gunma University School of Medicine and Hospital, Maebashi, Japan.. hinohara@showa.gunma-u.ac.jp
SO Acta anaesthesiologica Scandinavica, (2003 Mar) 47 (3) 335-41.
Journal code: 0370270. ISSN: 0001-5172.
CY Denmark
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200306
ED Entered STN: 20030322
Last Updated on STN: 20030701
Entered Medline: 20030630

L1 ANSWER 5 OF 13 MEDLINE on STN
AN 2003008631 MEDLINE
DN PubMed ID: 12502983

TI Systemic inflammation leads to resistance to atracurium without increasing
 membrane expression of acetylcholine receptors.
 AU Fink Heidrun; Lupp Peter; Mayer Barbara; Rosenbrock Hilkea; Metzger
 Jochen; Martyn J A Jeevendra; Blobner Manfred
 CS Research Fellow, Klinik fur Anaesthesiologie der Technischen Universitat
 Munchen, Klinikum rechts der Isar, Germany.
 NC GM 31569-19 (NIGMS)
 GM 55082-06 (NIGMS)
 GM 611411-4 (NIGMS)
 SO Anesthesiology, (2003 Jan) 98 (1) 82-8.
 Journal code: 1300217. ISSN: 0003-3022.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 200301
 ED Entered STN: 20030108
 Last Updated on STN: 20030122
 Entered Medline: 20030121

L1 ANSWER 6 OF 13 MEDLINE on STN
 AN 2002432172 MEDLINE
 DN PubMed ID: 12189247
 TI A novel angiogenic pathway mediated by non-neuronal nicotinic
 acetylcholine receptors.
 AU Heeschen Christopher; Weis Michael; Aicher Alexandra; Dimmeler Stefanie;
 Cooke John P
 CS Division of Cardiovascular Medicine, Stanford University School of
 Medicine, Stanford, California 94305, USA.
 NC 7RT-0128 (NHLBI)
 R01 HL-58638
 SO Journal of clinical investigation, (2002 Aug) 110 (4) 527-36.
 Journal code: 7802977. ISSN: 0021-9738.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 200209
 ED Entered STN: 20020822
 Last Updated on STN: 20020907
 Entered Medline: 20020906

L1 ANSWER 7 OF 13 MEDLINE on STN
 AN 2002169257 MEDLINE
 DN PubMed ID: 11901203
 TI Pharmacological stimulation of the cholinergic antiinflammatory pathway.
 CM Comment in: J Exp Med. 2002 Mar 18;195(6):F25-8. PubMed ID: 11901206
 AU Bernik Thomas R; Friedman Steven G; Ochani Mahendar; DiRaimo Robert; Ulloa
 Luis; Yang Huan; Sudan Samridhi; Czura Christopher J; Ivanova Svetlana M;
 Tracey Kevin J
 CS Laboratory of Biomedical Science, North Shore-LIJ Research Institute, 350
 Community Drive, Manhasset, NY 11030, USA.
 NC GM 62508 (NIGMS)
 GM 63075 (NIGMS)
 SO Journal of experimental medicine, (2002 Mar 18) 195 (6) 781-8.
 Journal code: 2985109R. ISSN: 0022-1007.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200204
 ED Entered STN: 20020320
 Last Updated on STN: 20020417
 Entered Medline: 20020416

L1 ANSWER 8 OF 13 MEDLINE on STN
 AN 2000016180 MEDLINE
 DN PubMed ID: 10549987
 TI Alcohol blocks TNFalpha but not other cytokine-mediated neuroprotection to NMDA.
 AU Gahring L C; Carlson N G; Wieggl W A; Howard J; Rogers S W
 CS Salt Lake City Veterans Administration Medical Center, Department of Medicine, University of Utah School of Medicine, 84112-5330, USA..
 lorise.gahring@hci.utah.edu
 NC AA11418 (NIAAA)
 NS35181 (NINDS)
 SO Alcoholism, clinical and experimental research, (1999 Oct) 23 (10) 1571-9.
 Journal code: 7707242. ISSN: 0145-6008.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199911
 ED Entered STN: 20000113
 Last Updated on STN: 20000113
 Entered Medline: 19991130

L1 ANSWER 9 OF 13 MEDLINE on STN
 AN 1999371209 MEDLINE
 DN PubMed ID: 10443609
 TI Cecal ligation and puncture peritonitis model shows decreased nicotinic acetylcholine receptor numbers in rat muscle: immunopathologic mechanisms?.
 CM Comment in: Anesthesiology. 1999 Aug;91(2):337-9. PubMed ID: 10443592
 AU Tsukagoshi H; Morita T; Takahashi K; Kunimoto F; Goto F
 CS Department of Anesthesiology and Reanimatology, Gunma University School of Medicine, Gunma-Ken, Japan.
 SO Anesthesiology, (1999 Aug) 91 (2) 448-60.
 Journal code: 1300217. ISSN: 0003-3022.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 199908
 ED Entered STN: 19990827
 Last Updated on STN: 19990827
 Entered Medline: 19990819

L1 ANSWER 10 OF 13 MEDLINE on STN
 AN 1998211893 MEDLINE
 DN PubMed ID: 9552164
 TI Nicotine blocks TNF-alpha-mediated neuroprotection to NMDA by an alpha-bungarotoxin-sensitive pathway.
 AU Carlson N G; Bacchi A; Rogers S W; Gahring L C
 CS Geriatric Research, Education and Clinical Center, Veterans Administration Medical Center, University of Utah School of Medicine, Salt Lake City 84112, USA.
 NC AG04418 (NIA)
 R01 AA11418 (NIAAA)
 R01 NS35181 (NINDS)
 SO Journal of neurobiology, (1998 Apr) 35 (1) 29-36.
 Journal code: 0213640. ISSN: 0022-3034.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199806
 ED Entered STN: 19980625
 Last Updated on STN: 19980625
 Entered Medline: 19980615

L1 ANSWER 11 OF 13 MEDLINE on STN
AN 86028153 MEDLINE
DN PubMed ID: 4053172
TI Extravasation of polymorphonuclear leukocytes from the cerebral microvasculature. **Inflammatory** response induced by alpha-bungarotoxin.
AU Faustmann P M; Dermietzel R
SO Cell and tissue research, (1985) 242 (2) 399-407.
Journal code: 0417625. ISSN: 0302-766X.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198512
ED Entered STN: 19900321
Last Updated on STN: 19970203
Entered Medline: 19851210

L1 ANSWER 12 OF 13 MEDLINE on STN
AN 84285847 MEDLINE
DN PubMed ID: 6468604
TI In vitro inactivation of the neurotoxic action of beta-bungarotoxin by the marine natural product, manoalide.
AU de Freitas J C; Blankemeier L A; Jacobs R S
SO Experientia, (1984 Aug 15) 40 (8) 864-5.
Journal code: 0376547. ISSN: 0014-4754.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198409
ED Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19840928

L1 ANSWER 13 OF 13 MEDLINE on STN
AN 77044134 MEDLINE
DN PubMed ID: 185992
TI Extrajunctional acetylcholine receptors. Alterations in human and experimental neuromuscular diseases.
AU Ringel S P; Bender A N; Engel W K
SO Archives of neurology, (1976 Nov) 33 (11) 751-8.
Journal code: 0372436. ISSN: 0003-9942.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 197612
ED Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19761223

=>

---Logging off of STN---

=>

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=> LOG Y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

3.35

3.56

STN INTERNATIONAL LOGOFF AT 16:08:17 ON 04 MAY 2005

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NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 FEB 25 CA/CAPLUS - Russian Agency for Patents and Trademarks
(ROSPATENT) added to list of core patent offices covered
NEWS 4 FEB 28 PATDPAFULL - New display fields provide for legal status
data from INPADOC
NEWS 5 FEB 28 BABS - Current-awareness alerts (SDIs) available
NEWS 6 FEB 28 MEDLINE/LMEDLINE reloaded
NEWS 7 MAR 02 GBFULL: New full-text patent database on STN
NEWS 8 MAR 03 REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS 9 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 10 MAR 22 KOREAPAT now updated monthly; patent information enhanced
NEWS 11 MAR 22 Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS 12 MAR 22 PATDPASPC - New patent database available
NEWS 13 MAR 22 REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS 14 APR 04 EPFULL enhanced with additional patent information and new
fields
NEWS 15 APR 04 EMBASE - Database reloaded and enhanced
NEWS 16 APR 18 New CAS Information Use Policies available online
NEWS 17 APR 25 Patent searching, including current-awareness alerts (SDIs),
based on application date in CA/CAPLUS and USPATFULL/USPAT2
may be affected by a change in filing date for U.S.
applications.
NEWS 18 APR 26 Improved searching of U.S. Patent Classifications for
U.S. patent records in CA/CAPLUS

NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

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FILE 'HOME' ENTERED AT 16:13:38 ON 04 MAY 2005

=> file medline

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'MEDLINE' ENTERED AT 16:13:49 ON 04 MAY 2005

FILE LAST UPDATED: 3 MAY 2005 (20050503/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP
RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>

http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s bungarotoxin(L) (DMXBA or anabaseine)

3230 BUNGAROTOXIN

6 DMXBA

74 ANABASEINE

L1 17 BUNGAROTOXIN(L) (DMXBA OR ANABASEINE)

=> d 1-17 bib

L1 ANSWER 1 OF 17 MEDLINE on STN

AN 2003579418 MEDLINE

DN PubMed ID: 14660001

TI Functional role of nicotinic acetylcholine receptors in apoptosis in HL-60
cell line.

CM Erratum in: Eur J Pharmacol. 2004 Apr 26;491(1):85

AU Gimonet Delphine; Grailhe Regis; Coninx Paul; Antonicelli Frank; Haye
Bernard; Liautaud-Roger Françoise

CS Institut Jean-Godinot, Secteur Prevention, BP 171, 1 Avenue du general
Koenig, 51056 Reims Cedex, France.

SO European journal of pharmacology, (2003 Dec 15) 482 (1-3) 25-9.
Journal code: 1254354. ISSN: 0014-2999.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200408

ED Entered STN: 20031216

Last Updated on STN: 20040817

Entered Medline: 20040816

L1 ANSWER 2 OF 17 MEDLINE on STN

AN 2002625947 MEDLINE

DN PubMed ID: 12383953

TI Activation and inhibition of native neuronal alpha-bungarotoxin-sensitive
 nicotinic ACh receptors.
 AU Uteshev Vladimir V; Meyer Edwin M; Papke Roger L
 CS Department of Pharmacology and Therapeutics, University of Florida College
 of Medicine, Box 100267 JHMHSC, 1600 SW Archer Rd, University of Florida,
 Gainesville 32610-0267, FL, USA.
 NC GM57481-01A2 (NIGMS)
 NS32888-02 (NINDS)
 SO Brain research, (2002 Sep '6) 948 (1-2) 33-46.
 Journal code: 0045503. ISSN: 0006-8993.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200210
 ED Entered STN: 20021018
 Last Updated on STN: 20021031
 Entered Medline: 20021030

L1 ANSWER 3 OF 17 MEDLINE on STN
 AN 2001553518 MEDLINE
 DN PubMed ID: 11600102
 TI Intragastric DMXB-A, an alpha7 nicotinic agonist, improves deficient
 sensory inhibition in DBA/2 mice.
 AU Simosky J K; Stevens K E; Kem W R; Freedman R
 CS Department of Pharmacology, University of Colorado Health Sciences Center,
 Denver, Colorado 80262, USA.
 NC MH44211 (NIMH)
 MH58680 (NIMH)
 SO Biological psychiatry, (2001 Oct 1) 50 (7) 493-500.
 Journal code: 0213264. ISSN: 0006-3223.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200112
 ED Entered STN: 20011016
 Last Updated on STN: 20020122
 Entered Medline: 20011204

L1 ANSWER 4 OF 17 MEDLINE on STN
 AN 2001452253 MEDLINE
 DN PubMed ID: 11498514
 TI Differential effects of chronic drug treatment on alpha3* and alpha7
 nicotinic receptor binding sites, in hippocampal neurones and SH-SY5Y
 cells.
 AU Ridley D L; Rogers A; Wonnacott S
 CS Department of Biology and Biochemistry, University of Bath, Bath, BA2 7AY...
 SO British journal of pharmacology, (2001 Aug) 133 (8) 1286-95.
 Journal code: 7502536. ISSN: 0007-1188.
 CY England: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200110
 ED Entered STN: 20010813
 Last Updated on STN: 20011029
 Entered Medline: 20011025

L1 ANSWER 5 OF 17 MEDLINE on STN
 AN 2001072857 MEDLINE
 DN PubMed ID: 10942043
 TI The brain alpha7 nicotinic receptor may be an important therapeutic target
 for the treatment of Alzheimer's disease: studies with DMXBA (GTS-21).
 AU Kem W R

CS Department of Pharmacology and Experimental Therapeutics, University of
Florida College of Medicine, Gainesville 32610-0267, USA..
kem@pharmacology.ufl.edu

SO Behavioural brain research, (2000 Aug) 113 (1-2) 169-81. Ref: 76
Journal code: 8004872. ISSN: 0166-4328.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)

LA English

FS Priority Journals

EM 200101

ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010103

L1 ANSWER 6 OF 17 MEDLINE on STN

AN 2001047937 MEDLINE

DN PubMed ID: 10986337

TI Inhibition of nitric oxide synthase prevents alpha 7 nicotinic
receptor-mediated restoration of inhibitory auditory gating in rat
hippocampus.

AU Adams C E; Stevens K E; Kem W R; Freedman R

CS Department of Psychiatry, University of Colorado Health Sciences Center,
Denver, CO 80262, USA.. cathy.adams@uchsc.edu

NC 5P50 MH44212 (NIMH)
R29 MH51931 (NIMH)

SO Brain research, (2000 Sep 22) 877 (2) 235-44.
Journal code: 0045503. ISSN: 0006-8993.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200012

ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001214

L1 ANSWER 7 OF 17 MEDLINE on STN

AN 2001017827 MEDLINE

DN PubMed ID: 11032889

TI Involvement of alpha7 nicotinic acetylcholine receptors in activation of
tyrosine hydroxylase and dopamine beta-hydroxylase gene expression in PC12
cells.

AU Gueorguiev V D; Zeman R J; Meyer E M; Sabban E L

CS Department of Biochemistry and Molecular Biology, New York Medical
College, Valhalla, New York 10595, USA.

NC NS28869 (NINDS)

SO Journal of neurochemistry, (2000 Nov) 75 (5) 1997-2005.
Journal code: 2985190R. ISSN: 0022-3042.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200011

ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001109

L1 ANSWER 8 OF 17 MEDLINE on STN

AN 1999081800 MEDLINE

DN PubMed ID: 9864273

TI Analysis of 3-(4-hydroxy, 2-Methoxybenzylidene)anabaseine selectivity and
activity at human and rat alpha-7 nicotinic receptors.

AU Meyer E M; Kuryatov A; Gerzanich V; Lindstrom J; Papke R L

CS Department of Pharmacology and Therapeutics, University of Florida,
Gainesville, Florida, USA.
NC NIA P01 10485 (NINDS)
NS32888
SO Journal of pharmacology and experimental therapeutics, (1998 Dec) 287 (3)
918-25.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199901
ED Entered STN: 19990209
Last Updated on STN: 19990209
Entered Medline: 19990127

L1 ANSWER 9 OF 17 MEDLINE on STN
AN 1998456786 MEDLINE
DN PubMed ID: 9783447
TI Alzheimer's drug design based upon an invertebrate toxin (anabaseine)
which is a potent nicotinic receptor agonist.
AU Kem W R
CS Department of Pharmacology and Therapeutics, University of Florida College
of Medicine, Gainesville 32610-0267, USA.. Kem@pharmacology.ufl.edu
SO Invertebrate neuroscience : IN, (1997 Sep-Dec) 3 (2-3) 251-9. Ref: 39
Journal code: 9602489. ISSN: 1354-2516.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199811
ED Entered STN: 19990106
Last Updated on STN: 19990106
Entered Medline: 19981118

L1 ANSWER 10 OF 17 MEDLINE on STN
AN 1998312879 MEDLINE
DN PubMed ID: 9650859
TI Up-regulation of human alpha7 nicotinic receptors by chronic treatment
with activator and antagonist ligands.
AU Molinari E J; Delbono O; Messi M L; Renganathan M; Arneric S P; Sullivan J
P; Gopalakrishnan M
CS Neurological and Urological Diseases Research, Pharmaceutical Products
Division, Abbott Laboratories, Abbott Park, IL 60064-3500, USA.
SO European journal of pharmacology, (1998 Apr 17) 347 (1) 131-9.
Journal code: 1254354. ISSN: 0014-2999.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199809
ED Entered STN: 19980910
Last Updated on STN: 19980910
Entered Medline: 19980901

L1 ANSWER 11 OF 17 MEDLINE on STN
AN 1998261203 MEDLINE
DN PubMed ID: 9600576
TI Selective alpha7-nicotinic agonists normalize inhibition of auditory
response in DBA mice.
AU Stevens K E; Kem W R; Mahnir V M; Freedman R
CS Medical Research Service, Veterans Affairs Medical Center, Denver, CO
80262, USA.. stevensk@semdan.uchsc.edu

NC R29 MH51931 (NIMH)
 SO Psychopharmacology, (1998 Apr) 136 (4) 320-7.
 Journal code: 7608025. ISSN: 0033-3158.
 CY GERMANY: Germany, Federal Republic of
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199808
 ED Entered STN: 19980820
 Last Updated on STN: 19980820
 Entered Medline: 19980807

L1 ANSWER 12 OF 17 MEDLINE on STN
 AN 1998173744 MEDLINE
 DN PubMed ID: 9495863
 TI Neuroprotective and memory-related actions of novel alpha-7 nicotinic agents with different mixed agonist/antagonist properties.
 AU Meyer E M; Tay E T; Zoltewicz J A; Meyers C; King M A; Papke R L; De Fiebre C M
 CS Department of Pharmacology and Therapeutics, University of Florida, Gainesville, USA.
 NC AG P01 10481 (NIA)
 AG00176 (NIA)
 NS32888 (NINDS)
 SO Journal of pharmacology and experimental therapeutics, (1998 Mar) 284 (3) 1026-32.
 Journal code: 0376362. ISSN: 0022-3565.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199804
 ED Entered STN: 19980416
 Last Updated on STN: 19980416
 Entered Medline: 19980409

L1 ANSWER 13 OF 17 MEDLINE on STN
 AN 1998064078 MEDLINE
 DN PubMed ID: 9399967
 TI Anabaseine is a potent agonist on muscle and neuronal alpha-bungarotoxin-sensitive nicotinic receptors.
 AU Kem W R; Mahnir V M; Papke R L; Lingle C J
 CS Department of Pharmacology and Therapeutics, College of Medicine, University of Florida, Gainesville, Florida, USA.
 SO Journal of pharmacology and experimental therapeutics, (1997 Dec) 283 (3) 979-92.
 Journal code: 0376362. ISSN: 0022-3565.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199801
 ED Entered STN: 19980129
 Last Updated on STN: 19980129
 Entered Medline: 19980115

L1 ANSWER 14 OF 17 MEDLINE on STN
 AN 1998034233 MEDLINE
 DN PubMed ID: 9369300
 TI 3-[2,4-Dimethoxybenzylidene]anabaseine (DMXB) selectively activates rat alpha7 receptors and improves memory-related behaviors in a mecamylamine-sensitive manner.
 AU Meyer E M; Tay E T; Papke R L; Meyers C; Huang G L; de Fiebre C M
 CS Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Gainesville 32610, USA.

NC AG00176 (NIA)
 PO1 10481
 PO1 AG01425 (NIA)
 SO Brain research, (1997 Sep 12) 768 (1-2) 49-56.
 Journal code: 0045503. ISSN: 0006-8993.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199712
 ED Entered STN: 19980109
 Last Updated on STN: 19980109
 Entered Medline: 19971218

L1 ANSWER 15 OF 17 MEDLINE on STN
 AN 97410009 MEDLINE
 DN PubMed ID: 9266724
 TI Nicotinic receptor stimulation protects neurons against beta-amyloid toxicity.
 AU Kihara T; Shimohama S; Sawada H; Kimura J; Kume T; Kochiyama H; Maeda T; Akaike A
 CS Department of Neurology, Faculty of Medicine, Kyoto University, Japan..
 SO Annals of neurology, (1997 Aug) 42 (2) 159-63.
 Journal code: 7707449. ISSN: 0364-5134.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199709
 ED Entered STN: 19970922
 Last Updated on STN: 19970922
 Entered Medline: 19970905

L1 ANSWER 16 OF 17 MEDLINE on STN
 AN 95139993 MEDLINE
 DN PubMed ID: 7838125
 TI Characterization of a series of anabaseine-derived compounds reveals that the 3-(4)-dimethylaminocinnamylidene derivative is a selective agonist at neuronal nicotinic alpha 7/125I-alpha-bungarotoxin receptor subtypes.
 AU de Fiebre C M; Meyer E M; Henry J C; Muraskin S I; Kem W R; Papke R L
 CS Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Gainesville 32610-0267.
 NC AG00196 (NIA)
 AG07561 (NIA)
 PO1-AG10485 (NIA)
 SO Molecular pharmacology, (1995 Jan) 47 (1) 164-71.
 Journal code: 0035523. ISSN: 0026-895X.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199502
 ED Entered STN: 19950314
 Last Updated on STN: 19950314
 Entered Medline: 19950228

L1 ANSWER 17 OF 17 MEDLINE on STN
 AN 94301514 MEDLINE
 DN PubMed ID: 8028765
 TI A novel nicotinic agonist facilitates induction of long-term potentiation in the rat hippocampus.
 AU Hunter B E; de Fiebre C M; Papke R L; Kem W R; Meyer E M
 CS Department of Neuroscience, University of Florida College of Medicine, Gainesville 32601.

NC NIA P01 AG10485 (NIA)
T32 AG00196 (NIA)
T32AA07561 (NIAAA)
SO Neuroscience letters, (1994 Feb 28) 168 (1-2) 130-4.
Journal code: 7600130. ISSN: 0304-3940.
CY Ireland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199408
ED Entered STN: 19940818
Last Updated on STN: 19970203
Entered Medline: 19940808

=> s l1 and (inflamm? or rheumatoid arthritis or RA)
302840 INFLAMM?
80268 RHEUMATOID
109389 ARTHRITIS
47480 RHEUMATOID ARTHRITIS
(RHEUMATOID(W) ARTHRITIS)
435794 RA

L2 0 L1 AND (INFLAMM? OR RHEUMATOID ARTHRITIS OR RA)

=> s l1 and inflam
4 INFLAM

L3 0 L1 AND INFLAM

=> s l1 and inflam?
306638 INFLAM?

L4 0 L1 AND INFLAM?

=> s bungarotoxin and inflamm?

3230 BUNGAROTOXIN

302840 INFLAMM?

L5 24 BUNGAROTOXIN AND INFLAMM?

=> s l5 and (rheumatoid arthritis or RA)

80268 RHEUMATOID

109889 ARTHRITIS

47480 RHEUMATOID ARTHRITIS

(RHEUMATOID(W) ARTHRITIS)

435794 RA

L6 1 L5 AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1 all

L6 ANSWER 1 OF 1 MEDLINE on STN

AN 2003033986 MEDLINE

DN PubMed ID: 12508119

TI Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator of inflammation.

CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886

Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636

AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J

CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.

SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.

Journal code: 0410462. ISSN: 0028-0836.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals
 EM 200303
 ED Entered STN: 20030124
 Last Updated on STN: 20030308
 Entered Medline: 20030307
 AB Excessive **inflammation** and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, **rheumatoid arthritis** and **inflammatory** bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive **inflammation**. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic **inflammatory** responses. This physiological mechanism, termed the 'cholinergic anti-**inflammatory** pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the nicotinic acetylcholine receptor alpha7 subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in alpha7-deficient mice. Thus, the nicotinic acetylcholine receptor alpha7 subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-**inflammatory** pathway.
 CT Check Tags: Female; Male
 Acetylcholine: PD, pharmacology
 Aging: PH, physiology
 Animals
 Bungarotoxins: ME, metabolism
 Cells, Cultured
 Electric Stimulation
 Endotoxemia: GE, genetics
 Endotoxemia: ME, metabolism
 Humans
 Inflammation: GE, genetics
 ***Inflammation: ME, metabolism**
 Macrophages, Peritoneal: DE, drug effects
 *Macrophages, Peritoneal: ME, metabolism
 Mice
 Mice, Inbred C57BL
 Mice, Knockout
 Nicotine: PD, pharmacology
 Protein Subunits: GE, genetics
 Protein Subunits: ME, metabolism
 RNA, Messenger: GE, genetics
 RNA, Messenger: ME, metabolism
 Receptors, Nicotinic: GE, genetics
 *Receptors, Nicotinic: ME, metabolism
 Research Support, U.S. Gov't, Non-P.H.S.
 Research Support, U.S. Gov't, P.H.S.
 *Tumor Necrosis Factor-alpha: ME, metabolism
 Vagus Nerve: PH, physiology
 RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
 CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin receptor)

=>

---Logging off of STN---

=>

Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

7.67

7.88

STN INTERNATIONAL LOGOFF AT 16:20:52 ON 04 MAY 2005

=> d his ful

FILE 'HCAPLUS' ENTERED AT 11:02:09 ON 11 MAY 2005

E TRACEY KEVIN J/AU

L1 159 SEA ABB=ON ("TRACEY KEVIN"/AU OR "TRACEY KEVIN J"/AU)

E WANG HONG/AU

L2 1744 SEA ABB=ON "WANG HONG"/AU

L3 9 SEA ABB=ON L1 AND L2

SELECT RN L3 1-9

FILE 'REGISTRY' ENTERED AT 11:04:07 ON 11 MAY 2005

L4 44 SEA ABB=ON (54-11-5/BI OR 51-84-3/BI OR 11032-79-4/BI OR
152478-57-4/BI OR 154291-01-7/BI OR 156743-65-6/BI OR 156743-78
-1/BI OR 156743-79-2/BI OR 156743-85-0/BI OR 178419-47-1/BI OR
220099-94-5/BI OR 248270-35-1/BI OR 248270-40-8/BI OR 248270-41
-9/BI OR 37209-28-2/BI OR 373358-00-0/BI OR 400855-55-2/BI OR
400855-58-5/BI OR 400855-62-1/BI OR 50-36-2/BI OR 5937-29-1/BI
OR 708210-26-8/BI OR 708210-27-9/BI OR 708306-01-8/BI OR
709881-00-5/BI OR 709881-01-6/BI OR 709881-02-7/BI OR 709881-03
-8/BI OR 709881-04-9/BI OR 709881-05-0/BI OR 709881-06-1/BI OR
709881-07-2/BI OR 709881-08-3/BI OR 709881-09-4/BI OR 709881-10
-7/BI OR 709881-11-8/BI OR 709881-12-9/BI OR 709881-13-0/BI OR
709881-14-1/BI OR 709881-15-2/BI OR 709881-16-3/BI OR 709881-17
-4/BI OR 709881-18-5/BI OR 709881-19-6/BI)

FILE 'HCAPLUS' ENTERED AT 11:04:15 ON 11 MAY 2005

L5 4 SEA ABB=ON L3 AND L4

L6 ANALYZE L5 2 CT : 118 TERMS

FILE 'REGISTRY' ENTERED AT 11:20:54 ON 11 MAY 2005

L7 2 SEA ABB=ON (248270-40-8 OR 156743-65-6)/RN

*These are the
2 requested compounds*

FILE 'HCAPLUS' ENTERED AT 11:21:44 ON 11 MAY 2005

L8 4 SEA ABB=ON L7

L9 1 SEA ABB=ON L8 AND ?RHEUM?(W)?ARTHRITIS?

L10 1 SEA ABB=ON ?ANABASEINE? AND ?RHEUM?(W)?ARTHRITIS?

L11 1 SEA ABB=ON L9 OR L10 *1 cit from CH Plus*

FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO' ENTERED AT
12:40:34 ON 11 MAY 2005

L12 1 SEA ABB=ON L10

*1 cit from other databases,
relating on "anabaxine" & R.A.*

```
=> d que stat l11
L7      2 SEA FILE=REGISTRY ABB=ON (248270-40-8 OR 156743-65-6)/RN
L8      4 SEA FILE=HCAPLUS ABB=ON L7
L9      1 SEA FILE=HCAPLUS ABB=ON L8 AND ?RHEUM?(W)?ARTHRITIS?
L10     1 SEA FILE=HCAPLUS ABB=ON ?ANABASEINE? AND ?RHEUM?(W)?ARTHRITIS?
L11     1 SEA FILE=HCAPLUS ABB=ON L9 OR L10
```

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=> d ibib abs hitstr l11 1-1
```

```
L11 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:      2004:513538 HCAPLUS
DOCUMENT NUMBER:       141:65099
TITLE:                 Inhibition of inflammation using  $\alpha 7$  nicotinic
                        receptor-binding cholinergic agonists
INVENTOR(S):           Tracey, Kevin J.; Wang, Hong
PATENT ASSIGNEE(S):    North Shore-Long Island Jewish Research Institute, USA
SOURCE:                PCT Int. Appl., 75 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:         Patent
LANGUAGE:              English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:
```

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004052365	A2	20040624	WO 2003-US38708	20031205
WO 2004052365	A3	20040923		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004204355	A1	20041014	US 2003-729427	20031205
PRIORITY APPLN. INFO.:			US 2002-431650P	P 20021206

```
OTHER SOURCE(S):      MARPAT 141:65099
```

AB Methods of inhibiting release of a proinflammatory cytokine from a macrophage are provided. The methods comprise treating the macrophage with a cholinergic agonist in an amount sufficient to decrease the amount of the proinflammatory cytokine that is released from the macrophage, wherein the cholinergic agonist is selective for an $\alpha 7$ nicotinic receptor. Methods for inhibiting an inflammatory cytokine cascade in a patient are also provided. The methods comprise treating the patient with a cholinergic agonist in an amount sufficient to inhibit the inflammatory cytokine cascade, wherein the cholinergic agonist is selective for an $\alpha 7$ nicotinic receptor. Methods for determining whether a compound is a cholinergic agonist reactive with an $\alpha 7$ nicotinic receptor are also provided. The methods comprise determining whether the compound inhibits release

of a proinflammatory cytokine from a mammalian cell. Addnl., methods for determining whether a compound is a cholinergic antagonist reactive with an $\alpha 7$ nicotinic receptor are provided. These methods comprise determining whether the compound reduces the ability of a cholinergic agonist to inhibit the release of a proinflammatory cytokine from a mammalian cell. Oligonucleotides or mimetics capable of inhibiting attenuation of

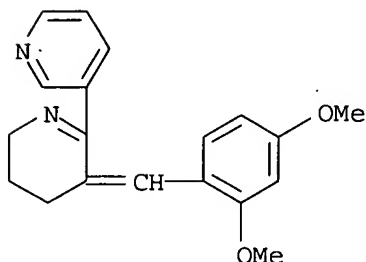
lipopolysaccharide-induced TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are also provided. The oligonucleotides or mimetics consist essentially of a sequence greater than 5 nucleotides long that is complementary to an mRNA of an $\alpha 7$ receptor. Addnl., methods of inhibiting attenuation of TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are provided. These methods comprise treating the macrophage with the above-described oligonucleotide or mimetic. Sepsis in mice was treated with 3-(2,4-dimethoxybenzylidene)**anabaseine**.

IT 156743-65-6 248270-40-8

RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(as cholinergic agonist of $\alpha 7$ nicotinic receptor; inflammation inhibition with $\alpha 7$ nicotinic receptor-binding cholinergic agonists)

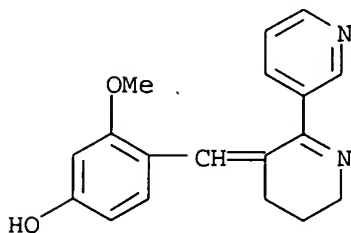
RN 156743-65-6 HCAPLUS

CN 2,3'-Bipyridine, 3-[(2,4-dimethoxyphenyl)methylene]-3,4,5,6-tetrahydro-(9CI) (CA INDEX NAME)



RN 248270-40-8 HCAPLUS

CN Phenol, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]-3-methoxy-(9CI) (CA INDEX NAME)



=> d que stat 112

L10 1 SEA FILE=HCAPLUS ABB=ON ?ANABASEINE? AND ?RHEUM? (W) ?ARTHRITIS?

L12 1 SEA L10

=> d 112 ibib abs 1-1

L12 ANSWER 1 OF 1 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER: 2004-468700 [44] WPIDS

DOC. NO. CPI: C2004-175666

TITLE: Treatment of a condition e.g. allergy mediated by release of proinflammatory cytokine involves treating a patient with a cholinergic agonist selective for an alpha-7 nicotinic receptor to decrease the released amount of the cytokine.

DERWENT CLASS: B02 B03 B04 D16

INVENTOR(S): TRACEY, K J; WANG, H

PATENT ASSIGNEE(S): (NSHO-N) NORTH SHORE-LONG ISLAND JEWISH RES

COUNTRY COUNT: 107

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004052365	A2	20040624	(200444)*	EN	75
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE					
LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE					
DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG					
KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM					
PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US					
UZ VC VN YU ZA ZM ZW					
US 2004204355	A1	20041014	(200468)		
AU 2003298939	A1	20040630	(200472)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004052365	A2	WO 2003-US38708	20031205
US 2004204355	A1 Provisional	US 2002-431650P	20021206
		US 2003-729427	20031205
AU 2003298939	A1	AU 2003-298939	20031205

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003298939	A1 Based on	WO 2004052365

PRIORITY APPLN. INFO: US 2002-431650P 20021206; US
2003-729427 20031205

AN 2004-468700 [44] WPIDS

AB WO2004052365 A UPAB: 20040712

NOVELTY - Treatment of a patient suffering from a condition mediated by release of proinflammatory cytokine e.g. appendicitis involves treating a patient with a cholinergic agonist (a1) selective for an alpha -7 nicotinic receptor to decrease the amount of the proinflammatory cytokine which is released from a macrophage.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) determining (M1) whether a compound is a cholinergic agonist

selective for an alpha -7 nicotinic receptor involving:

(i) determining whether the compound inhibits release of a proinflammatory cytokine from a mammalian cell (e.g. immune cell or macrophage); and

(ii) determining whether the compound is (a1) reactive with at least one nicotinic receptor that is not alpha -7 (where the compound that inhibits the release of the proinflammatory cytokine from the mammalian cell, but is not (a1) reactive with at least one nicotinic receptor that is not alpha -7, is a cholinergic agonist selective for alpha -7 nicotinic receptor);

(2) determining (M2) whether a compound is a cholinergic antagonist reactive with an alpha -7 nicotinic receptor involving determining whether the compound reduces the ability of (a1) to inhibit the release of a proinflammatory cytokine from a mammalian cell (e.g. immune cell or macrophage) (where the compound that reduces the ability of a (a1) to inhibit the release of the proinflammatory cytokine from the mammalian cell is a cholinergic antagonist reactive with alpha -7 receptor);

(3) determining (M3) whether a test compound has the ability to inhibit inflammation involving either determining whether the test compound is a cholinergic agonist reactive with alpha -7 nicotinic receptor (preferably on a macrophage) or determining whether the test compound inhibits binding of an antagonist (preferably bungarotoxin) to alpha -7 nicotinic receptor;

(4) an oligonucleotide or mimetic (containing a sequence greater than 5 nucleotides long that is complementary to an mRNA of an alpha -7 receptor) capable of inhibiting attenuation of lipopolysaccharide-induced TNF release from a mammalian macrophage upon exposure of the macrophage to (a1); and

(5) inhibiting attenuation of TNF release from a mammalian (e.g. mammal such as human) macrophage upon exposure of the macrophage to (a1) involving treating the macrophage with the oligonucleotide or mimetic.

ACTIVITY - Antiinflammatory; Gastrointestinal-Gen.; Antiulcer; Hepatotropic; Virucide; Antiasthmatic; Antiallergic; Antibacterial; Immunosuppressive; Vasotropic; Vulnerary; Antipyretic; Immunomodulator; Gynecological; Respiratory-Gen.; CNS-Gen.; Anti-HIV; Fungicide; Antimalarial; Antianginal; Cardiant; Antiarteriosclerotic; Thrombolytic; Antirheumatic; Neuroprotective; Analgesic; Muscular-Gen.; Antiarthritic; Ophthalmological; Cytostatic; Osteopathic; Antigout; Antithyroid; Dermatological; Nephrotropic; Uropathic; Nootropic; Antidiabetic; Antipsoriatic.

Mice (cecal ligation and puncture murine) treated with 3-2,4-dimethoxybenzylidene **anabaseine** (test compound) (4 mg/kg) or vehicle control for treating sepsis. The test compound and the control were administered intraperitoneally twice a day on day 1 and day 2 (24 and 48 hours post-surgery respectively) and were administered once on day 3. Mortality was monitored daily for 14 days after surgery. The test compound/control showed % of survival of mice was found to be 91/30% after 14 days. Thus the test compound significantly improved survival in the model of sepsis.

MECHANISM OF ACTION - Proinflammatory cytokine release inhibitor; Cholinergic agonist; TNF release inhibitor.

Effect of (-)-Spiro-1-azabicyclo(2.2.2)octane-3,5'-oxazolidin-2'-one (test compound) in inhibiting release of TNF- alpha using LPS-stimulated murine RAW 264.7 macrophage-like cells was as follows: Murine RAW 264.7 macrophage-like cells were treated with (-)-spiro-1-azabicyclo(2.2.2)octane-3,5'-oxazolidin-2'-one (test compound) at 0, 0.001, 0.1, 1, 10 and 100 mu M. Five minutes after the addition of the test compound, the cells were treated with LPS (500 ng/ml). TNF- alpha was measured by ELISA method. The TNF- alpha release (ng/ml) was 2, approx. 2,

1.5, approx. 1.6, approx. 1.8 and approx. 0.4 at 0, 0.01, 0.1, 1, 10 and 100 nM respectively. The results demonstrate that the higher concentration of the test compound inhibit TNF- alpha release from the cells. TNF- alpha release was decreased by more than four times in cells treated with 100 mu M test compound compared to the control cells.

USE - For the treatment of appendicitis, peptic, gastric, and duodenal ulcers, peritonitis, pancreatitis, epiglottitis, achalasia, cholangitis, cholecystitis, hepatitis, Whipple's disease, asthma, allergy, anaphylactic shock, immune complex disease, organ ischemia, reperfusion injury, organ necrosis, hay fever, sepsis, septicemia, endotoxic shock, cachexia, hyperpyrexia, eosinophilic granuloma, granulomatosis, sarcoidosis, septic abortion, epididymitis, vaginitis, prostatitis, urethritis, bronchitis, emphysema, rhinitis, cystic fibrosis, pneumonitis, pneumoultramicroscopic silicovolcanoconiosis, alveolitis, bronchiolitis, pharyngitis, pleurisy, sinusitis, influenza, respiratory syncytial virus infection, herpes infection, HIV infection, hepatitis B virus infection, hepatitis C virus infection, disseminated bacteremia, Dengue fever, candidiasis, malaria, filariasis, amebiasis, hydatid cysts, burns, vasculitis, angiitis, endocarditis, arteritis, atherosclerosis, thrombophlebitis, pericarditis, myocarditis, myocardial ischemia, periarteritis nodosa, rheumatic fever, celiac disease, congestive heart failure, adult respiratory distress syndrome, chronic obstructive pulmonary disease, meningitis, encephalitis, neuritis, neuralgia, spinal cord injury, paralysis, uveitis, arthritides, arthralgias, osteomyelitis, facitis, Paget's disease, gout, periodontal disease, **rheumatoid arthritis**, synovitis, myasthenia gravis, thyroiditis, systemic lupus erythematosus, Goodpasture's syndrome, Behcets's syndrome, allograft rejection, graft-versus-host disease, ankylosing spondylitis, Berger's disease, ankylosing spondylitis, Retier's syndrome, Hodgkins disease, cerebral infarction or cerebral embolism) mediated by release of a proinflammatory cytokine (e.g. tumor necrosis factor (TNF), interleukin (IL)-1 beta , IL-6, IL-18 and high mobility group protein 1 (HMG-1)); for determining whether a compound is (a1) selective for alpha -7 nicotinic receptor; for determining whether a compound is a cholinergic antagonist reactive with an alpha -7 nicotinic receptor (all claimed). Also useful for the treatment of acute or ischemic colitis, diverticulitis, Crohn's disease, dermatomyositis, sunburn, urticaria, warts, wheals, Alzheimer's disease, multiple sclerosis, Guillame Barre syndrome, type II diabetes, psoriasis; gastrointestinal disorder (including gastric ulcer).

ADVANTAGE - The method reduces the inflammation. (a1) provides fewer side effects than currently identified agonists that are relatively non-specific.

Dwg. 0/11

=> d ibib abs hitstr 15 1-4

L5 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:907341 HCAPLUS
DOCUMENT NUMBER: 141:374660
TITLE: Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis
AUTHOR(S): Wang, Hong; Liao, Hong; Ochani, Mahendar; Justiniani, Marilou; Lin, Xinchun; Yang, Lihong; Al-Abed, Yousef; Wang, Haichao; Metz, Christine; Miller, Edmund J.; Tracey, Kevin J.; Ulloa, Luis
CORPORATE SOURCE: The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, Manhasset, NY, 11030, USA
SOURCE: Nature Medicine (New York, NY, United States) (2004), 10(11), 1216-1221
CODEN: NAMEFI; ISSN: 1078-8956
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Physiol. anti-inflammatory mechanisms can potentially be exploited for the treatment of inflammatory disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or tumor necrosis factor- α (TNF- α). Nicotinic stimulation prevents activation of the NF- κ B pathway and inhibits HMGB1 secretion through a specific 'nicotinic anti-inflammatory pathway' that requires the α 7 nicotinic acetylcholine receptor (α 7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in exptl. models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiol. inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the α 7nAChR might have therapeutic potential for the treatment of sepsis.

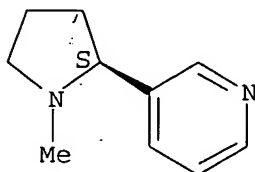
IT 54-11-5, Nicotine

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)

RN 54-11-5 HCAPLUS

CN Pyridine, 3-[(2S)-1-methyl-2-pyrrolidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 51-84-3, Acetylcholine, biological studies

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholinergic agonists inhibit HMGB1 release and improve survival in

exptl. sepsis)
 RN 51-84-3 HCAPLUS
 CN Ethanaminium, 2-(acetyloxy)-N,N,N-trimethyl- (9CI) (CA INDEX NAME)

$\text{Me}_3^+\text{N}-\text{CH}_2-\text{CH}_2-\text{OAc}$

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:513538 HCAPLUS

DOCUMENT NUMBER: 141:65099

TITLE: Inhibition of inflammation using $\alpha 7$ nicotinic receptor-binding cholinergic agonists

INVENTOR(S): Tracey, Kevin J.; Wang, Hong

PATENT ASSIGNEE(S): North Shore-Long Island Jewish Research Institute, USA

SOURCE: PCT Int. Appl., 75 pp. .

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004052365	A2	20040624	WO 2003-US38708	20031205
WO 2004052365	A3	20040923		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2004204355	A1	20041014	US 2003-729427	20031205
PRIORITY APPLN. INFO.:			US 2002-431650P	P 20021206

OTHER SOURCE(S): MARPAT 141:65099

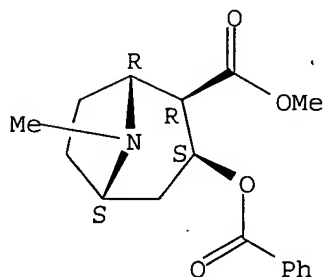
AB Methods of inhibiting release of a proinflammatory cytokine from a macrophage are provided. The methods comprise treating the macrophage with a cholinergic agonist in an amount sufficient to decrease the amount of the proinflammatory cytokine that is released from the macrophage, wherein the cholinergic agonist is selective for an $\alpha 7$ nicotinic receptor. Methods for inhibiting an inflammatory cytokine cascade in a patient are also provided. The methods comprise treating the patient with a cholinergic agonist in an amount sufficient to inhibit the inflammatory cytokine cascade, wherein the cholinergic agonist is selective for an $\alpha 7$ nicotinic receptor. Methods for determining whether a compound is a cholinergic agonist reactive with an $\alpha 7$ nicotinic receptor are also provided. The methods comprise determining whether the compound inhibits release

of a proinflammatory cytokine from a mammalian cell. Addnl., methods for determining whether a compound is a cholinergic antagonist reactive with an $\alpha 7$ nicotinic receptor are provided. These methods comprise determining whether the compound reduces the ability of a cholinergic agonist to inhibit

the release of a proinflammatory cytokine from a mammalian cell. Oligonucleotides or mimetics capable of inhibiting attenuation of lipopolysaccharide-induced TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are also provided. The oligonucleotides or mimetics consist essentially of a sequence greater than 5 nucleotides long that is complementary to an mRNA of an $\alpha 7$ receptor. Addnl., methods of inhibiting attenuation of TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are provided. These methods comprise treating the macrophage with the above-described oligonucleotide or mimetic. Sepsis in mice was treated with 3-(2,4-dimethoxybenzylidene)anabaseine.

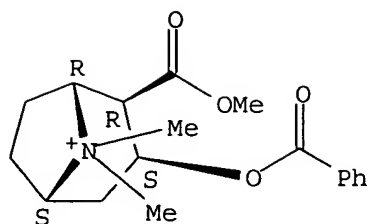
IT 50-36-2D, Cocaine, quaternary analogs 5937-29-1, Cocaine methiodide 154291-01-7D, isomers 156743-65-6 156743-78-1 156743-79-2 156743-85-0 178419-47-1 220099-94-5 248270-35-1D, isomers 248270-40-8 248270-41-9 373358-00-0 400855-55-2 400855-58-5 400855-62-1 708210-26-8D, isomers 708210-27-9
 RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (as cholinergic agonist of $\alpha 7$ nicotinic receptor; inflammation inhibition with $\alpha 7$ nicotinic receptor-binding cholinergic agonists)
 RN 50-36-2 HCAPLUS
 CN 8-Azabicyclo[3.2.1]octane-2-carboxylic acid, 3-(benzoyloxy)-8-methyl-, methyl ester, (1R,2R,3S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 5937-29-1 HCAPLUS
 CN 8-Azoniabicyclo[3.2.1]octane, 3-(benzoyloxy)-2-(methoxycarbonyl)-8,8-dimethyl-, iodide, (1R,2R,3S,5S)- (9CI) (CA INDEX NAME)

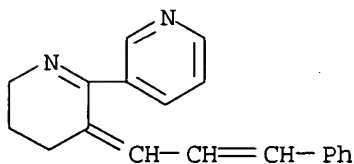
Absolute stereochemistry.



● I⁻

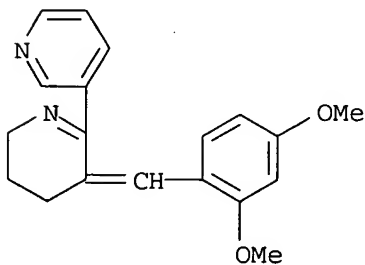
RN 154291-01-7 HCAPLUS

CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-(3-phenyl-2-propenylidene) - (9CI)
(CA INDEX NAME)



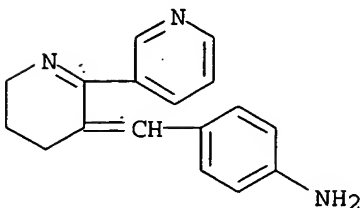
RN 156743-65-6 HCAPLUS

CN 2,3'-Bipyridine, 3-[(2,4-dimethoxyphenyl)methylene]-3,4,5,6-tetrahydro-
(9CI) (CA INDEX NAME)



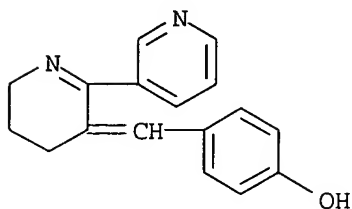
RN 156743-78-1 HCAPLUS

CN Benzenamine, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl] - (9CI)
(CA INDEX NAME)



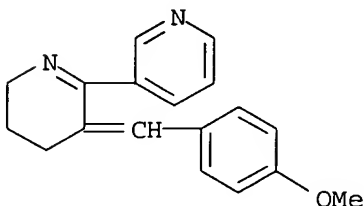
RN 156743-79-2 HCAPLUS

CN Phenol, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]- (9CI) (CA INDEX NAME)



RN 156743-85-0 HCAPLUS

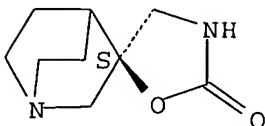
CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-[(4-methoxyphenyl)methylene]- (9CI) (CA INDEX NAME)



RN 178419-47-1 HCAPLUS

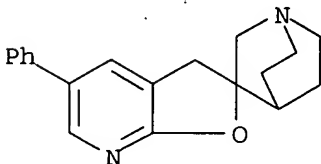
CN Spiro[1-azabicyclo[2.2.2]octane-3,5'-oxazolidin]-2'-one, (3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



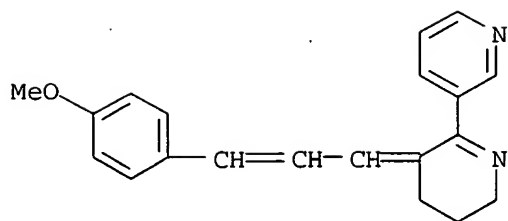
RN 220099-94-5 HCAPLUS

CN Spiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], 5'-phenyl- (9CI) (CA INDEX NAME)



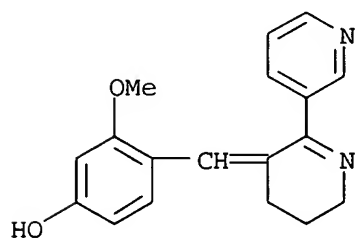
RN 248270-35-1 HCAPLUS

CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-[3-(4-methoxyphenyl)-2-propenylidene]- (9CI) (CA INDEX NAME)



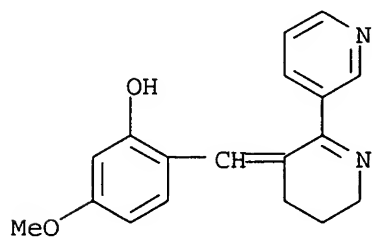
RN 248270-40-8 HCAPLUS

CN Phenol, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]-3-methoxy-
(9CI) (CA INDEX NAME)



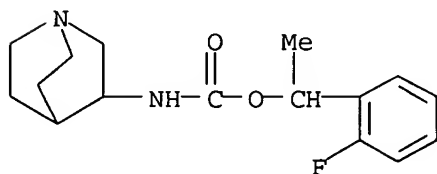
RN 248270-41-9 HCAPLUS

CN Phenol, 2-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]-5-methoxy-
(9CI) (CA INDEX NAME)



RN 373358-00-0 HCAPLUS

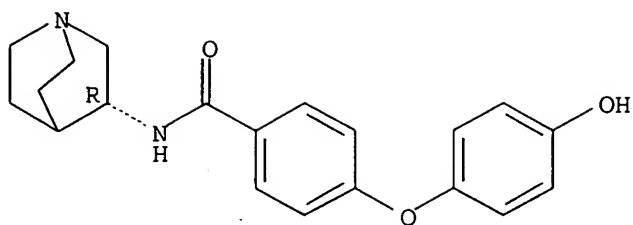
CN Carbamic acid, 1-azabicyclo[2.2.2]oct-3-yl-, 1-(2-fluorophenyl)ethyl ester
(9CI) (CA INDEX NAME)



RN 400855-55-2 HCAPLUS

CN Benzamide, N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-4-(4-hydroxyphenoxy)- (9CI)
(CA INDEX NAME)

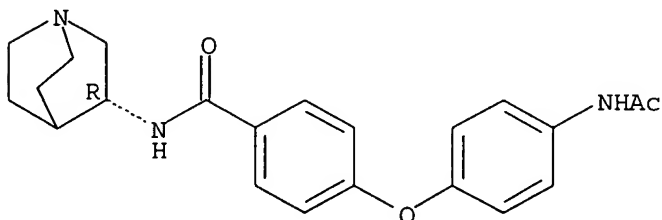
Absolute stereochemistry.



RN 400855-58-5 HCAPLUS

CN Benzamide, 4-[4-(acetylamino)phenoxy]-N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-
(9CI) (CA INDEX NAME)

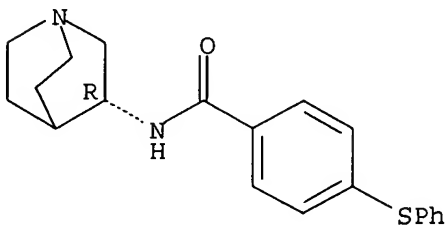
Absolute stereochemistry.



RN 400855-62-1 HCAPLUS

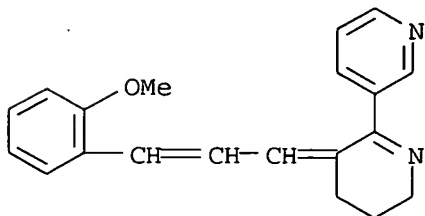
CN Benzamide, N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-4-(phenylthio)- (9CI) (CA
INDEX NAME)

Absolute stereochemistry.



RN 708210-26-8 HCAPLUS

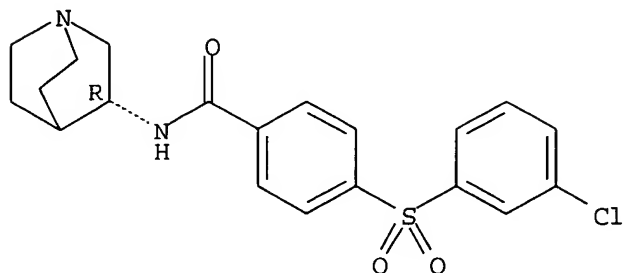
CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-[3-(2-methoxyphenyl)-2-propenylidene]- (9CI) (CA INDEX NAME)



RN 708210-27-9 HCAPLUS

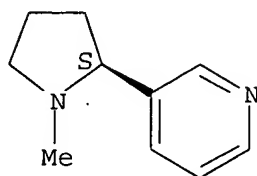
CN Benzamide, N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-4-[(3-chlorophenyl)sulfonyl]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 54-11-5, Nicotine
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (inflammation inhibition with $\alpha 7$ nicotinic receptor-binding
 cholinergic agonists)
 RN 54-11-5 HCAPLUS
 CN Pyridine, 3-[(2S)-1-methyl-2-pyrrolidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 708306-01-8
 RL: BSU (Biological study, unclassified); PAC (Pharmacological activity);
 THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (nucleotide sequence, inhibiting attenuation of LPS-induced TNF release
 from macrophage exposed to cholinergic agonist; inflammation inhibition
 with $\alpha 7$ nicotinic receptor-binding cholinergic agonists)
 RN 708306-01-8 HCAPLUS
 CN DNA, d(G-C-A-G-C-G-C-A-T-G-T-T-G-A-G-T-C-C-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 709881-00-5 709881-01-6 709881-02-7
 709881-03-8 709881-04-9 709881-05-0
 709881-06-1 709881-07-2 709881-08-3
 709881-09-4 709881-10-7 709881-11-8
 709881-12-9 709881-13-0 709881-14-1
 709881-15-2 709881-16-3 709881-17-4
 709881-18-5 709881-19-6
 RL: PRP (Properties)
 (unclaimed sequence; inhibition of inflammation using $\alpha 7$
 nicotinic receptor-binding cholinergic agonists)
 RN 709881-00-5 HCAPLUS
 CN DNA, d(C-C-A-G-A-C-C-T-G-A-G-C-A-A-C-T-T-C-A-T-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-01-6 HCAPLUS

CN DNA, d(A-A-T-G-A-G-T-C-G-A-C-C-T-G-C-A-A-A-C-A-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-02-7 HCAPLUS

CN DNA, d(G-A-C-T-G-T-T-C-G-T-T-T-C-C-C-A-G-A-T-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-03-8 HCAPLUS

CN DNA, d(A-C-G-A-A-G-T-T-G-G-G-A-G-C-C-G-A-C-A-T-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-04-9 HCAPLUS

CN DNA, d(C-G-A-G-A-T-C-A-G-T-A-C-G-A-T-G-G-C-C-T-A-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-05-0 HCAPLUS

CN DNA, d(T-C-T-G-T-G-A-C-T-A-A-T-C-C-G-C-T-C-T-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-06-1 HCAPLUS

CN DNA, d(A-T-C-A-C-C-T-A-C-C-A-C-T-T-C-G-T-C-A-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-07-2 HCAPLUS

CN DNA, d(G-T-A-T-G-T-G-G-T-C-C-A-T-C-A-C-C-A-T-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-08-3 HCAPLUS

CN DNA, d(C-C-C-G-G-C-A-A-G-A-G-G-A-G-T-G-A-A-A-G-G-T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-09-4 HCAPLUS

CN DNA, d(T-G-C-A-G-A-T-G-A-T-G-G-T-G-A-A-G-A-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-10-7 HCAPLUS

CN DNA, d(A-G-A-G-C-C-T-G-T-G-A-A-C-A-C-C-A-A-T-G-T-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-11-8 HCAPLUS

CN DNA, d(A-T-G-A-C-T-T-T-C-G-C-C-A-C-C-T-T-C-T-T-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-12-9 HCAPLUS

CN DNA, d(A-G-G-T-G-C-C-T-C-T-G-T-G-G-C-C-G-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-13-0 HCAPLUS

CN DNA, d(G-A-C-T-A-C-T-C-A-G-T-G-G-C-C-C-T-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-14-1 HCAPLUS

CN DNA, d(C-G-A-C-A-C-G-G-A-G-A-C-G-T-G-G-A-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-15-2 HCAPLUS

CN DNA, d(G-G-T-A-C-G-G-A-T-G-T-G-C-C-A-A-G-G-A-G-T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-16-3 HCAPLUS

CN DNA, d(C-A-A-G-G-A-T-C-C-G-G-A-C-T-C-A-A-C-A-T-G-C-G-C-T-G-C-T-C-G) (9CI)
(CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-17-4 HCAPLUS

CN DNA, d(C-G-G-C-T-C-G-A-G-T-C-A-C-C-A-G-T-G-T-G-G-T-T-A-C-G-C-A-A-A-G-T-C)
(9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-18-5 HCAPLUS

CN DNA, d(G-G-G-C-T-C-C-A-T-G-G-G-C-T-A-C-C-G-G-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 709881-19-6 HCAPLUS

CN DNA, d(C-C-C-C-A-T-G-G-C-C-C-T-G-G-C-A-C-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 11032-79-4, α -Bungarotoxin 37209-28-2,
Bungarotoxin

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7 nicotinic receptor antagonist; inflammation inhibition with
 α 7 nicotinic receptor-binding cholinergic agonists)

RN 11032-79-4 HCAPLUS

CN α -Bungarotoxin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 37209-28-2 HCAPLUS

CN Bungarotoxin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L5 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:216688 HCAPLUS

DOCUMENT NUMBER: 138:336197

TITLE: IFN- γ Induces High Mobility Group Box 1 Protein
Release Partly Through a TNF-Dependent Mechanism

AUTHOR(S): Rendon-Mitchell, Beatriz; Ochani, Mahendar; Li,
Jianhua; Han, Jialian; Wang, Hong; Yang,
Huan; Susarla, Seenu; Czura, Christopher; Mitchell,
Robert A.; Chen, Guoqian; Sama, Andrew E.;
Tracey, Kevin J.; Wang, Haichao

CORPORATE SOURCE: Center of Immunology and Inflammation, North
Shore-Long Island Jewish Research Institute,
Manhasset, NY, 11030, USA

SOURCE: Journal of Immunology (2003), 170(7), 3890-3897
CODEN: JOIMA3; ISSN: 0022-1767

PUBLISHER: American Association of Immunologists

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We recently discovered that a ubiquitous protein, high mobility group box
1 protein (HMGB1), is released by activated macrophages, and functions as
a late mediator of lethal systemic inflammation. To elucidate mechanisms
underlying the regulation of HMGB1 release, we examined the roles of other
cytokines in induction of HMGB1 release in macrophage cell cultures.
Macrophage migration inhibitory factor, macrophage-inflammatory protein
1 β , and IL-6 each failed to significantly induce the release of HMGB1
even at supraphysiol. levels (up to 200 ng/mL). IFN- γ , an

immunoregulatory cytokine known to mediate the innate immune response, dose-dependently induced the release of HMGB1, TNF, and NO, but not other cytokines such as IL-1 α , IL-1 β , or IL-6. Pharmacol. suppression of TNF activity with neutralizing Abs, or genetic disruption of TNF expression (TNF knockout) partially (50-60%) inhibited IFN- γ -mediated HMGB1 release. AG490, a specific inhibitor for Janus kinase 2 of the IFN- γ signaling pathway, dose-dependently attenuated IFN- γ -induced HMGB1 release. These data suggest that IFN- γ plays an important role in the regulation of HMGB1 release through a TNF- and Janus kinase 2-dependent mechanism.

IT 152478-57-4, Janus kinase 2

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IFN- γ induces high mobility group box 1 protein release partly through a TNF-dependent mechanism and)

RN 152478-57-4 HCAPLUS

CN Kinase (phosphorylating), JAK2 protein (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

REFERENCE COUNT: 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:54246 HCAPLUS

DOCUMENT NUMBER: 138:186295

TITLE: Nicotinic acetylcholine receptor $\alpha 7$ subunit is an essential regulator of inflammation

AUTHOR(S): Wang, Hong; Yu, Man; Ochani, Mahendar; Amella, Carol Ann; Tanovic, Mahira; Susarla, Seenu; Li, Jian Hua; Wang, Haichao; Yang, Huan; Ulloa, Luis; Al-Abed, Yousef; Czura, Christopher J.; Tracey, Kevin J.

CORPORATE SOURCE: Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, Manhasset, NY, 11030, USA

SOURCE: Nature (London, United Kingdom) (2003), 421(6921), 384-388

CODEN: NATUAS; ISSN: 0028-0836

PUBLISHER: Nature Publishing Group

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Excessive inflammation and tumor-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxemia, sepsis, rheumatoid arthritis and inflammatory bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive inflammation. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic inflammatory responses. This 'physiol. mechanism, termed the cholinergic anti-inflammatory pathway' has major implications in immunol. and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here the authors report that the nicotinic acetylcholine receptor $\alpha 7$ subunit is required for acetylcholine inhibition of macrophage TNF release. Elec. stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in $\alpha 7$ -deficient mice. Thus, the nicotinic acetylcholine receptor $\alpha 7$ subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-inflammatory pathway.

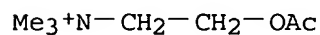
IT 51-84-3, Acetylcholine, biological studies 54-11-5,

Nicotine

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nicotinic acetylcholine receptor $\alpha 7$ subunit is an essential
regulator of inflammation)

RN 51-84-3 HCAPLUS

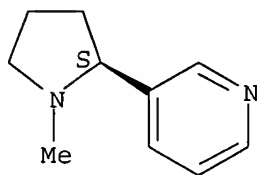
CN Ethanaminium, 2-(acetyloxy)-N,N,N-trimethyl- (9CI) (CA INDEX NAME)



RN 54-11-5 HCAPLUS

CN Pyridine, 3-[(2S)-1-methyl-2-pyrrolidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT:

27

THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	60	alpha near "7" near3 nicotinic near3 receptor	US-PGPUB; USPAT; EPO	OR	ON	2005/04/18 11:47
S2	24	alpha near "7" near3 nicotinic near3 receptor and inflam\$	US-PGPUB; USPAT; EPO	OR	ON	2005/04/06 17:13
S3	1995	(method same determining same whether same compound).clm.	US-PGPUB; USPAT; EPO	OR	ON	2005/04/18 11:48
S4	23	(method same determining same whether same compound).clm. and selective.clm. and receptor.clm.	US-PGPUB; USPAT; EPO	OR	ON	2005/04/18 11:49
S5	2	"5998429".pn. "6054434".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:13
S6	4	"6369224".pn. "6407095".pn. "6432975".pn. "6441049".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:14
S7	2	"6479172".pn. "6479510".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:14
S8	1	"6486172".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:14
S9	6	"6492386".pn. "6500840".pn. "6538003".pn. "6562816".pn. "6569865".pn. "6599916".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:03
S10	13	"6492386".pn. "6500840".pn. "6538003".pn. "6562816".pn. "6569865".pn. "6599916".pn. "6486172".pn. "6479510".pn. "6479172".pn. "6441049".pn. "6432975".pn. "6407095".pn. "6369224".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:33
S11	16	wishka.in.	US-PGPUB	OR	ON	2005/05/04 12:34
S12	241	oneill.in.	US-PGPUB	OR	ON	2005/05/04 12:45
S13	1620	walker.in.	US-PGPUB	OR	ON	2005/05/04 12:35
S14	37	walker.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 12:44
S15	1	loch.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 12:37
S16	190	peters.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 12:44
S17	20	oneill.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 13:00
S18	3	"6635645".pn. "6552012".pn. "6492385".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:33

S19	1	wo-9910338-\$.did.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:43
S20	11	tracey.in. and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:48
S21	1	rheumatoid near2 arthritis and anabaseine and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:50
S22	0	("2004/0204355").URPN.	USPAT	OR	ON	2005/05/04 13:50
S23	23	rheumatoid near2 arthritis same nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:59
S24	5	rheumatoid near2 arthritis same nicotinic same alpha	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:02
S25	822	rheumatoid near2 arthritis same nicotinic ("alpha 7" or alpha-7)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:02
S26	800	rheumatoid near2 arthritis same nicotinic near S7 ("alpha 7" or alpha-7)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:03
S27	0	rheumatoid near2 arthritis same nicotinic near3 ("alpha 7" or alpha-7)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:20
S28	483	514/305.ccls.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:04
S29	20	514/305.ccls. and nicotinic and arthritis	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:04
S30	3	514/305.ccls. and nicotinic and arthritis and rheumatoid	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:07
S31	1	"6432975".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:07
S32	0	rheumatoid near2 arthritis same nicotinic near3 ("alpha 7" or alpha-7 or ".alpha.7")	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:27
S33	0	rheumatoid near2 arthritis same nicotinic near5 ("alpha 7" or alpha-7 or ".alpha.7")	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:27
S34	7	rheumatoid near2 arthritis and nicotinic near5 ("alpha 7" or alpha-7 or ".alpha.7")	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:38
S35	0	racey.in. and tn timer and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:38

S36	7	tracey.in. and tnf and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S37	0	("2002/0016344").URPN.	USPAT	OR	ON	2005/05/04 14:39
S38	0	".alpha.7" near2 nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S39	0	".alpha.7" near3 nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S40	0	".alpha.7" and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S41	126	(alpha7 or "alpha 7" or alpha-7) near3 nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:07
S42	24	(alpha7 or "alpha 7" or alpha-7) near3 nicotinic and ("tumor necrosis" or tnf)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:46
S43	0	tang.in. and cathepsin.ti.	US-PGPUB	OR	ON	2005/05/04 15:17
S44	1	tang.in. and cathepsin.ti.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:17
S45	48	groppi.in. and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:46
S46	1	"6500840".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/18 10:18
S47	1	"5977144".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/18 12:34
S48	2	"6838471".pn. "6610713".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/18 12:35